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BACK SPEC









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A Peek in the Publisher's Poke

ECEMBER IS a joyous month for most, and especially for desert lovers. It brings cool nights and daytime temperatures that give one the wanderlust, the urge to get into the back-country for some solitude and serenity.

That's just what author Al Pearce has in mind in his article, "Never Enough Time," about canoeing on Lake Mead. Taking pen and paddle in hand, he gives us a glimpse of what such an adventure is like. One interesting fact that Al left out is that he made his own canoe. Perhaps I can convince him to tell us how he did it in a future issue.

It gives me great pleasure to introduce a new feature to Desert Magazine that I am sure will become a popular part of our format. Entitled, "Desert Ghosts," it will deal with old segments of the past, telling a brief history and what remains for one to see today. Author Howard Neal kicks off the series with "Chinese Camp" in California's Mother Lode Country. If any reader has a ghost they would like to hear about, drop us a line.

Desert has moved its Editorial Offices and Book Shop to bright new quarters. Located on Highway 111 at Deep Canyon Road, in Palm Desert, we look forward to welcoming our old friends, and meeting a lot of new ones. Our hours are 9 to 4, and we are closed on the weekends.

We at DESERT hope that the peace and serenity that is so much a part of the desert southwest can be shared by all in every part of the world as the Holiday Season nears.



New Mexico is a country where edges meet-formed by the Western rim of the Great Plains, the windy ridges of the Rockies and the strangeness of the Sonoran Desert. It is a vertical country, where one looks down from cold fir-spruce forests into hot valleys of yucca, cactus and desert flowers a mile below.

Traditions and cultures are as variable as the landscape. Here is the Dinetah, the Holy Land of the Navajos made safe from monsters by the Hero Twins and guarded by the four Sacred Mountains. Here, too, are the pueblos of the Keresan, Tanoan and Zunian people who had built a peaceful democratic society while Europe bled through the Dark Ages and who still call the clouds with their ritual dances. And here remain the old Hispanic mountain villages which mark the last frontier of the Spanish Empire.

In this collection of landscapes by David Muench and illuminating words by Tony Hillerman, New Mexico's many and varied contrasts unfold in a unique blend that is her mysterious beauty-and a grandeur that is our natural heritage.

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Books for Desert Readers



DESERT PLANTS FOR DESERT GARDENS By Patricia Moorten and Rex Nevins

Compiled for better understanding and appreciation of the usefulness and

beauty of plants indigenous to the desert region, this book will prove most helpful for homeowners, landscape architects, interior decorators and nurseries. It brings to attention the principle of working with Nature instead of against it, and of appreciation of the desert for what it is rather than comparison with watered regions.

General knowledge of desert plants is important for proper design of desert gardens, including container plants, pool areas and complete landscaping. This book includes a complete guide to desert plants, listed by their common and botanical names, to aid in selecting the proper plants, shrubs or trees for every purpose.

The authors are eminently qualified to produce such a book. Patricia Moorten is an internationally known botanist and designer in the specialized profession of desert plants. Co-owner and executive director of Moorten's Botanical Gardens, Palm Springs, Mrs. Moorten has also served as a member of the board of directors of the Cactus and Succulent Society of America, Inc. Rex Nevins is an award-winning newspaper reporter, author and photographer.

Profusely illustrated, paperback, 113 pages, \$3.00.



TREASURE HUNTER'S MANUAL #7
By Karl von Mueller

Is there one among us with so little imagination that he has never dreamed of finding lost treasure? What wildly exciting fantasies are conjured up by the mere thought of coming upon hidden, and perhaps long-lost, treasures of the past. Most of us, alas, give over these dreams when we come to terms with a harsh, workaday world. The realities and demands on our time and energies make it seem foolhardy to pursue such dreams.

OWYHEE TRAILS:

The West's Forgotten Corner

Mike Hanley with Ellis Lucia

The Owyhees, as they rise impressively from the high desert of Oregon and Idaho, have been the site of mining booms and Indian battles, holdups and range wars. Precious metals abounded on their slopes, and their valleys held another sort of riches in the form of water and feed for cattle and sheep. Rancher-author Mike Hanley, who lives in Jordan Valley, Oregon, under the shadow of the Owyhee Mountains, and his collaborator, the well known writer, Ellis Lucia, recount the boisterous past and intriguing present of this still wild corner of the West.

TIMBER COUNTRY

Earl Roberge

Here, at last, is a beautiful, big, informative book on the controversial logging industry of the Great Northwest: a book that shows logging as it is, by an author with first hand observation and information on the subject. Beautifully illustrated with 137 full color photographs, it is the first comprehensive report on a dynamic industry that is basic to the economy and ecology of the Northwest and the nation.



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But is it impossible? In his book, Treasure Hunter's Manual, Karl von Mueller tells how anyone with a lick of curiosity and a degree of determination can embark on a treasure hunting career spending as much or as little time as is possible for him. Sometimes treasure is as close as your own backyard or attic, or the search may take you far afield.

Treasure is not limited to cash or bullion. It may consist of anything whatever that has a cash or convertible value. The list may include money in all forms, bullion, jewelry, guns, gems, heirlooms, genuine antiques, rare letters and documents, rare and scarce books, mummies, skeletons, trade stamps and trade stamp books, Liberty bonds, securities and just about anything else that is not made or used anymore.

The author covers every aspect of treasure hunting: how, when and where, tools and supplies, maps and transportation, instruments and how to use them. the law and tax problems, as well as legends and myths.

This is an adventure in that even after many readings one constantly finds some new and exciting bits of information. Secret meanings, private passages, helpful ideas, fascinating facts are carefully and skillfully hidden within its pages. The deeper you dig, the more rewarding your find. Tyro or pro, there is treasure trove for everyone.

So—as you read this book, be prepared to stumble upon many treasures of words and facts and figures. In the suddenly mushrooming field of adventure literature, there is still no work to compare with the authority of Treasure Hunter's Manual-nor any that is so much fun to read.

Happy hunting!

Paperback, well illustrated, 295 pages, \$6.50.

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OUR HISTORIC DESERT, The Story of the Anza-Borrego State Park. Text by Diana Lindsay, Edited by Richard Pourade. The largest state park in the United States, this book presents a concise and cogent history of the things which have made this desert unique. The author details the geologic beginning and traces the history from Juan Bautista de Anza and early-day settlers, through to the existence today of the huge park. Hardcover, 144 pages, beautifully illustrated, \$9.50.

FLOWERS OF THE CANYON COUNTRY by Stanley L. Welsh, text; and Bill Ratcliffe, photographs. Brigham Young University Press. Two professionals have united their talents to present an informative, scholarly and artistic promotion of the beauty found in flowers and plants of vast regions of the Southwest. Paperback, 51 pages, \$2.95.

A FIELD GUIDE TO INSECTS of America North of Mexico by Donald J. Borror and Richard E. White. This is the most comprehensive, authoritative and up-to-date guide to North America insects ever published. It covers 579 families of insects and has more than 1300 line drawings and 142 color plates. Hardcover, 372 pages, glossary, references, \$5.95.

FANTASIES OF GOLD by E. B. Sayles. During his search for archeological finds for more than 30 years, the author was exposed to the rumors and legends of lost gold and treasures. After his retirement as curator of the Arizona State Museum, he classified and delved into these still unsolved mysteries. An interesting and informative book on lost bonanzas and legends, many of which have never been published. Hardcover, well illustrated, 135 pages, \$6.50.



THE CALIFORNIA MISSIONS by the Editors of Sunset Books. A beautifully written history of California's 21 missions. One can feel, as he reads, the ferver of the padres as they gathered materials to build their churches, and an insight into history develops as the authors tell in simple prose what was going on in the world at the same time. 300 pages, complete with artful sketches and photographs, and paintings in color, hard-cover, large format, \$12.75.

NEVADA GHOST TOWNS AND MINING CAMPS by Stanley W. Paher. Covering all of Nevada's 17 counties, Paher has documented 575 mining camps, many of which have been erased from the earth. The book contains the greatest and most complete collection of historic photographs of Nevada ever published. This, coupled with his excellent writing and map, creates a book of lasting value. Large 9x11 format, 700 photographs, hardcover, 492 pages, \$15.00.

BOOKS OF

THE ROCKS BEGIN TO SPEAK by LaVan Martineau. The author tells how his interest in rock writing led to years of study and how he has learned that many—especially the complex petroglyphs—are historical accounts of actual events. Hardcover, well illustrated, glossary bibliography, 210 pages, \$8.95.

FROSTY, A Raccoon to Remember by Harriett E. Weaver. The only uniformed woman on California's State Park Ranger crews for 20 years, Harriett Weaver shares her hilarious and heart-warming experiences of being a "mother" to an orphaned baby raccoon. A delightful book for all ages. Illustrated with line-drawings by Jennifer O. Dewey, hard cover, 156 pages, \$5.95

DICTIONARY OF PREHISTORIC INDIAN ARTIFACTS OF THE AMERICAN SOUTHWEST by Franklin Barnett. A highly informative book that both illustrates and describes Indian artifacts of the Southwest, it is a valuable guide for the person interested in archaeology and anthropology. Includes 250 major types of artifacts. Each item has a photo and definition. Paperback, 130 pages, beautifully illustrated, \$7.95.





OLD MINES AND GHOST CAMPS OF CALIFORNIA, compiled by A. Ekman, I. H. Parker, W. H. Storms, H. W. Penniman and M. E. Dittmar. A lot of informative reading takes you county by county through the vast mining areas of the Mother Lode and adjoining rich properties. Paperback, photos, 144 pages, \$3.50.

OUTDOOR SURVIVAL SKILLS by Larry Dean Olsen. This book had to be lived before it could be written. The author's mastery of primitive skills has made him confident that survival living need not be an ordeal once a person has learned to adjust. Chapters deal with building shelters, making fires, finding water, use of plants for food and medication. Buckram cover, well-illustrated, 188 pages, revised edition boasts of 96 4-color photos added. \$3.95

GEM TRAILS IN CALIFORNIA by A. L. Abbott. This compact little book can easily be carried while hiking or riding and combines detailed map drawings with pictures. In addition to gem and mineral names with their specific locations, there are other leads to nearby ghost towns, campgrounds and recreation areas. Paperback, illus., \$2.95.

DEAD MEN DO TELL TALES by Lake Erie Schaefer. A sequel to BURIED TREASURE & LOST MINES by Frank Fish, the author knew Fish for many years and claims he was murdered. Her book adds other information on alleged lost bonanzas, plus reasons why she thinks Fish did not die a natural death as stated by the authorities. Paperback, illus., 80 pages, \$3.00.

THE DESERT IS YOURS by Erle Stanley Gardner. This is the late author's fifth book written on the desert but the first that is devoted to the western desert of the United States. With parties of hunters and companions, he proves to be the true adventurer, combing the vast reaches of trackless land, and shows how the good outweighs the bad in the perils of the desert. Hardcover, well illustrated, 256 pages, \$7.50.

DEATH VALLEY GHOST TOWNS by Stanley Paher. Death Valley, today a National Monument, has in its environs the ghostly remains of many mines and mining towns. The author has also written of ghost towns in Nevada and Arizona and knows how to blend a brief outline of each of Death Valley's ghost towns with historic photos. For sheer drama, fact or fiction, it produces an enticing package for ghost town buffs. Paperback, illus., 9x12 format, 48 pages, \$1.95.

EARTHQUAKE COUNTRY by Robert lacopi. Published by Sunset Books, this well illustrated book separates fact from fiction and shows where faults are located, what to do in the event of an earthquake, past history and what to expect in the future. Large format, slick paperback, 160 pages, \$2.95.

DESERT, The American Southwest by Ruth Kirk. Combining her knowledge of the physical characteristics of the land, and man's relation to the desert from the prehistoric past to the probable future, with her photographer's eye and her enthusiasm for a strange and beautiful country, the result of Ruth Kirk's work is an extraordinarily perceptive account of the living desert. Highly recommended. Hardcover, beautifully illustrated, 334 pages, \$10.00.





BURIED TREASURE & LOST MINES, by Frank Fish. One of the original treasure hunters provides data on 93 lost bonanzas, many of which he personally searched for. He died under mysterious circumstances in 1968 after leading an adventurous life. Illustrated with photos and maps. Paperback, 68 pages, \$2.00.

MY CANYONLANDS by Kent Frost. A vivid account of the early exploration of Utah's Canyonlands by the author who spent his entire life exploring America's new national park and who presently runs a guide service through the scenic country. Hardcover, artist illustrations, 160 pages, \$6.95.

COMMON EDIBLE & USEFUL PLANTS OF THE WEST by Muriel Sweet. A description with artist drawings of edible (and those not to touch) plants along with how Indians and pioneers used them. Paperback, 64 pages, \$1.50.

POISONOUS DWELLERS OF THE West by Natt Dodge. Anyone walking through the back country should have and study this book, especially families with children. Illustrates and describes which dwellers are poisonous and which are not. Slick paperback, 40 pages, 75 cents.

THE WEST

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THE GOLD HEX by Ken Marquiss. A single man's endeavors, Ken has compiled 20 of his treaure hunts in book form. His failure to hit the "jackpot" does not mean he is treasureless. From gold panning to hardrock, from dredging to electronic metal detecting, he enjoyed a lifetime of "doing his thing." Slick paperback, illustrated with photos and maps, 146 pages, \$3.50.

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GHOST TOWN BOTTLE PRICE GUIDE by Wes and Ruby Bressie. A new and revised edition of their popular bottle book, first published in 1964. New section on Oriental relics, plus up-to-date values of bottles. Slick, paperback, illustrated, 124 pages, \$3.95

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NEVADA LOST MINES AND HIDDEN TREAS-URES* compiled by Dave Basso. The Second Edition is updated with photographs and a new look. Portions of U.S. Geological Survey topographic maps are provided to give the reader an idea of the general locale in which the specific story is centered. Paperback, 71 pages, \$2.50.

ANASAZI: Ancient People of the Rock, photographs by David Muench, text by Donald G. Pike. This outstanding, moving publication gives the reader the unique opportunity to see and understand the Anasazi civilization that existed some 2,000 years ago. Blending with David Muench's suberb photography, historian Donald Pike provides a fascinating text. Hard-cover, profusely illustrated with color and black and white photos, 192 pages, \$16.95 until Dec. 31, 1974, then \$18.95.

TREASURE HUNTER'S GUIDE TO THE LAW by Clair Martin Christensen. Answers all of the questions relative to the legal aspect of finding treasure trove. Subjects include Antiquities Act, Mining Claims, Gold Regulations, Trespass and Salvage, Claim Recordings, Tax Aspect and many others. Concise and factual. Paperback, 46 pages, \$2.75.

GEM TRAILS OF ARIZONA by Bessie W. Simpson. This field guide is prepared for the hobbiest and almost every location is accessible by car or pickup accompanied by maps to show sandy roads, steep rocky hills, etc., as cautions. Laws regarding collecting on Federal and Indian land outlined. Paperback, 88 pages, illus., \$3.00.

GOLDROCK Facts and Folktales by Iva L. Geisinger. The author describes this site on the California Desert giving brief, but interesting recounts of the facts and legends of the ghost towns, lost mines and personalities of the Goldrock area. Paperback, 65 pages, illus., \$2.25.

FIELD GUIDE TO WESTERN BIRDS by Roger Tory Peterson. The standard book for field identification sponsored by the National Audubon Society. 2nd edition, enlarged with new section on Hawaiian birds. 658 in full color. Hardcover, \$5.95.









HAPPY WANDERER TRIPS by Slim Barnard. Well-known TV stars, Henrietta and Slim Barnard have put together a selection of their trips throughout the West from their Happy Wanderer travel shows. Books have excellent maps, history, cost of lodging, meals, etc. Perfect for families planning weekends. Both books are large format, heavy paperback, 150 pages each and \$2.95 each. Volume One covers California and Volume Two Arizona, Nevada and Mexico. WHEN ORDERING STATE WHICH VOLUME.

THE BAJA BOOK, A Complete Map-Guide to Today's Baja California by Tom Miller and Elmar Baxter. Waiting until the new transpeninsular highway opened, the authors have pooled their knowledge to give every minute detail on gas stations, campgrounds, beaches, trailer parks, road conditions, boating, surfing, flying, fishing, beachcombing, in addition to a Baja Roadlog which has been broken into convenient two-mile segments. A tremendous package for every kind of recreationist. Paperback, 178 pages, illus., maps, \$7.95.

RELICS OF THE REDMAN by Marvin & Helen Davis. Relics can be valuable! Those dating back to Indian history in our land are becoming almost priceless. How to search for these "hard to find" Indian relics, where to search and at what time of the year, and types of tools needed, are among the many helpful suggestions given. Large format, many color and b/w illustrations, a striking cover. Paperback, 63 pages, \$3.95.

SOUTHWEST INDIAN CRAFT ARTS by Clara Lee Tanner. One of the best books on the subject, covering all phases of the culture of the Indians of the Southwest. Authentic in every way. Color and black and white illustrations, line drawings. Hardcover, 205 pages, \$15.00.

WILY WOMEN OF THE WEST by Grace Ernestine Ray. Such women of the West as Belle Starr, Cattle Kate and Lola Montez weren't all good and weren't all bad, but were fascinating and conflicting personalities, as researched by the author. Their lives of adventure were a vital part of the life of the Old West. Hardcover, illustrated, 155 pages, \$7.95

ROCKS AND MINERALS OF CALIFORNIA compiled by Vinson Brown, David Allan and James Stark. This third revised edition will save you hours of time by the description and pictures of rocks and minerals found in this state. Color pictures with clearly developed keys show you how to identify what you have found and gives you the fine tools to increase your ability as a field collector. Paperback, well illustrated with photos, locality maps, charts and quadrangle map information. 200 pages, \$3.95.

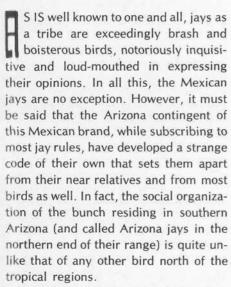
TURQUOIS by Joseph E. Pogue. [Memoirs of the National Academy of Sciences]. First printed in 1915, Turquois has in its third printing (1973) been updated in many ways. Among them are listed currently-operated Turquois mines, more color plates. The book is full of incredible results of research and an in-depth study of this fascinating mineral of superficial origin. Hardcover, 175 pages, beautifully illustrated, \$15.00.

The Togetherness

Jays

by K. L. BOYNTON

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With these jays, the core of the set-up is the flock, and this flock is maintained throughout the year, even during the nesting season. This, in itself, is quite unusual, for while it is customary for many kinds of birds to congregate together during part of the year, at family-raising times such temporary flocks break up. Pairs are formed, and the erst-while feeding and visiting pals of the old flocking days, suddenly regarded as intruders, are rudely chased away by

couples setting up housekeeping. Not so with these jays. At nesting time, more than ever, togetherness is the thing. Yet, unlike colonial birds such as cormorants and other sea birds, they do not form breeding colonies where each pair has its nest area which it vigorously defends.

Instead, what happens in the social set-up of these jays is that while a single couple eventually occupies the nest, members of the flock pitch in to help with the family-raising chores all the way from building the nest to the final graduation of the fledglings to adulthood.

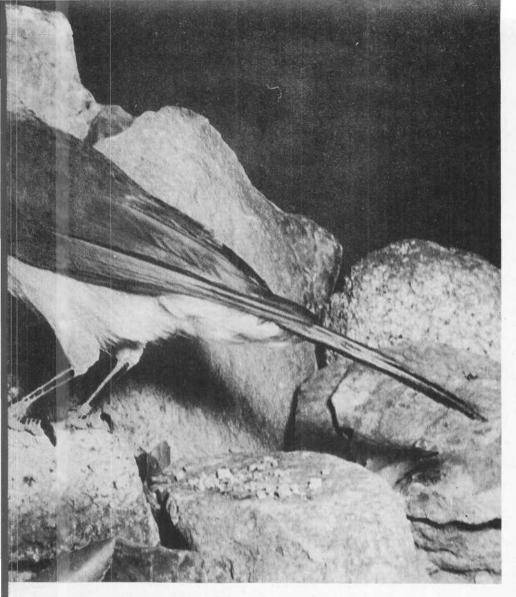
It need not be said what this cooperative breeding bit does to old thinking about bird behavior and evolutionary development. Nor, for that matter, why there has been so much cogitating on the meaning of this near communistic phenomenon since scientists became aware of what was actually going on.

Not that the light dawned all at once. True enough, naturalists for some time had been commenting on the flocking propensities of these jays and Zoologist Alfred Gross, studying them in the Santa Rita mountains of southern Arizona, came up with details on how a nest is



built by the Mexican Jay Construction Company. Architectural plans, it seems, call for an ample nest some 15 inches across made of twigs approximately a foot long arranged in a mass. In the center of this is a lined nest cavity some three to four inches in diameter and three inches deep. The whole works is built firmly against the trunk of a tree with good lateral branch and living twig support. Well up in a live oak is considered an especially good location.

Some seven or eight birds had a beak in the erection of the nest that Gross observed, and already had about a dozen sticks in place by April 9, when he first found it. Watching proceedings, he noted that jay-style building is done with accompanying sound effects. Long before the incoming bird, bearing construction materials, arrived, a curious fluttering of its wings could be heard followed by its announcing "wheat wheat" before landing. Taking a great deal of pains, it



The sociable little Arizona Jay. Photo by John Blackford.

carefully manipulated its stick into place, succeeding finally, after many tries, to get it into just the "right spot." All this time, three other members of the flock, perched nearby, were eying the work, muttering gutteral comments among themselves in the best sidewalk superintendent fashion. The first bird departed and the second arrived with its stick and, in due time, a third bird; then the byperchers, waiting only long enough for the last one to finish and fly off, landed en masse on the nest. Pulling and yanking and poking and commenting, they rearranged the material already added.

Work proceeded thereafter at a rate of about five trips per hour during the mornings; the birds, taking the afternoons off, were at it again by 4:00 P.M. Only fresh twigs from the trees were used, jerked off by one bird alone or with the assistance of another. In three days, the jays had the twig part all finished. Next, one flew in with a mess of horse-

hair. Sitting in the middle, it carefully wove in each strand. Another jay took over, and sitting, turned around and around, pressing with its breast, beginning to form the nest cavity. More soft material was brought, jay after jay working the pressing detail. By April 16, the job was done, inspected and apparently approved of by the band.

Then, for days, nothing happened.

Finally, on April 25, a jay came and sat on the nest a long time before leaving. Gross, scrambling up the tree, hopefully peered in the nest. No egg. Just a tryout, apparently.

Ditto for the next three days.

Finally, on April 29, he found the first egg, and by May 2, the last of a clutch of four was deposited. A jay family was finally underway.

Mrs. Jay does the sitting, and in periods of high heat, perches up on the nest edge shading the eggs from the direct sun. Band members showed up from

time to time, peering at the eggs and flying away. Finally, after 18 days, the first jaylets put in appearance: very naked, red of hide, bald of pate, and swollen of shut-eye. From the human point of view, not much to look at for all this joint effort.

But, they apparently suited the jay band who all pitched in to raise up the young. Exactly who in the flock does what in all this was not known until Biologist Jerram Brown, studying these jays in the same region and in the Chiricahua mountains of southern Arizona some years later, marked the birds with colored chicken leg bands. Individuals could then be easily identified and the activities of each tabulated.

There were two flocks in the vicinity and they did not mingle. Each had its own territory which its members defended. Rare crossing of boundaries gave rise to loud disputes and fights, so the flocks stayed well within their own realms. The only time there was interflock cooperation was when all the birds united to mob a couple of stuffed owls



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Brown had set out to make things inter-

Within each flock's area, nesting proceeded on schedule. The identifying bands showed that while non-breeding members of the flock do, indeed, assist in nest construction, the actual couple whose eggs are to be in it eventually assume the most responsibility and do a major share of the work. It also turns out that all is not always sweetness and light within the flock itself at this time, since a nesting pair, behind in its building, may rob the nest of another further along in construction. Lining material is particularly pirated. And, the truth must out. for among the thieves, the ladies, it seems, are the worst. Robbing goes on even if the owner is home, defense being mainly trying to squat down tight. Not that this always does any good, for the raider may reach underneath and pull out bits and pieces. Behavorists view this lack of defense as surprising, it being not at all the usual wont of nesting

Post-hatching time is an extremely busy one for the flock. The female brooding the young is fed by her mate and by helpers as well, perhaps as many as six times an hour. (One lady had a train of nine birds lugging groceries to her.) Every member of the flock assists in the care of the nestlings. In fact, in the five nests that Brown most intensively studies, 68 percent of all the feedings studied, 68 percent of all the feedings were done by helpers. Fresh-out chicks insects being added as they grow older. Certain helpers show a preference for a particular nest, and in some cases feed the nestlings oftener than do the real parents. And, since baby bird machinery is such that the food stuffed into wide-open mouths is processed quickly and departs from the other end in practically no time at all, birds bringing food also have fecal sacs to carry away. Hence, with feeding schedules and spicand-span housekeeping to keep up, there are much comings and goings at each nest for the ensuing days while the naked hatchlings gradually get to look more and more like birds. At some 24 days of age, they have their juvenile plumage and can hop from limb to limb.

Once out of the nest, the fledglings keep together, generally close to the ground. Adults, calling to them from thick masses of vines, encourage them to

hop up towards them in the tangle, into Were these jays, then, proving that what is tip-top protection for such little birds who as yet can't fly well, but who can jump.

At this fledgling stage of youngster development, a big shift in point of view on the part of the parents themselves takes place. Where before they had just fed their own chicks, now they begin to feed the young from other nests as often or oftener. It makes no difference whose offspring it is with its mouth wide open vammering for food. Feeding of the fledglings becomes a completely communal affair, with every member of the band working the grocery detail.

The net result of all this cooperation is practically no fledgling loss-a big factor making for success in an arid environment. Flock membership also makes it possible for these jays to hold a larger territory with less energy expenditure because the whole flock defends it. It also makes for greater efficiency in foraging for food, since everybody looks for it, togetherness in eating being a common sight among these birds in contrast to the habits of the unsociable Scrub Jays, for example. Danger is also minimized, since everybody watches for and helps rout predators.

But where does the individual come out on all this? Cooperative breeding is altruistic behavior, which involves the sacrifice of the individual's own fitness to enhance the fitness of others. Evolutionary theory has always held that such behavior would be selected against: in other words, the "big hearted" ones would fade from the scene without offspring, thus such self-sacrificing traits would not become established in the species.

Zoologist Brown, aware of all this, wrinkled his brow. True enough, all age classes of these jays tended to remain in the flock, the result being a close-knit social group. There was bound to be some individuals in this likely to be unpaired either because there were too many females or too many males, or they lacked jay-appeal, or because they were still yearlings and had not yet reached reproductive maturity. All these birds around with nothing to do would be conducive to altruistic feeding behavior, he

Also, since there would be inbreeding in the flock, in time many of its members would be actually related to each other. Biologist W. D. Hamilton was right when he predicted that, in the evolution of social behavior, the selection for altruistic traits should occur mainly among close relatives?

Only another study can tell.

So, while Brown checks up on what the birds he banded as nestlings do when they reach the matrimonial state, and other zoologists busily attack the behavior problem from other angles, the jays go on being altruisitc.

For them, togetherness is the stuff of success.



RELCO, Dept.DD 24, Box 10839, Houston, Tex. 77018



DESERT GHOSTS Chinese Camp

LOCATION: Chinese Camp is located approximately 12 miles south of Sonora on California Highway 49.

BRIEF HISTORY: In the year 1849, the cry was gold. People journeyed from near and far hoping to take their fortunes from the streams and rivers of California. They traveled in covered wagons, they walked and rode horseback and they sailed in ships. Almost every race and nationality was represented, and among the gold hunters there were not a few whose home had once been China.

By the year 1852, nearly 20,000 Chinese were in the Mother Lode Country, and during that decade of the fifties, some 5,000 of them settled at the town known as Chinese Camp. In many ways, Chinese Camp was a typical gold town. It had a brick Wells Fargo office, stores with their iron doors and shutters, and saloons with their rowdy customers. But, in some ways, the place was different. In other camps, the Chinese were a minority. At Chinese Camp, they dominated, making up more than half the population. Their culture could be seen even in the trees, as the locust-like Chinese "trees of heaven" were planted in greater profusion than elsewhere. More dramatic than the trees, though, was the one big differ-

ence about Chinese Camp. It was the site of a war!

The declaration of war was clear. It had been printed and posted. There was to be a battle, a battle of honor, on a rocky California plain, west of the Sierra Nevada foothills. The notice appeared in a September, 1856, issue of the Columbia Gazette. The headline read: "Challenge from the Sam-Yap Company, at Rock River Ranch, to the Yan-Wo Company at Chinese Camp." No words were minced. The Chinese tong of Sam-Yap promised extermination for those of Yan-Wo.

The challenge was accepted. Members of each group came from as far as San Francisco to do battle. This was not a local fight for a few. Weapons were purchased and prepared. There were pikes, spears, swords and even a few firearms. It was a very serious affair.

It had started as a small squabble, between a few members of each tong, over the fact that a boulder had rolled from the property of one onto the property of the other. Winning the argument became a matter of pride, a matter of saving face, so nearly 1,000 of the Yan-Wo faithful gathered to battle some 1,200 opponents.

More than 2,000 soldiers met, eyeball to eyeball, on a



"Trees of heaven" [ailanthus] shade the facade of the old U.S. Post Office at Chinese Camp. The locust-like trees were planted throughout the community and wherever else the Chinese settled in the California Mother Lode Country.

by HOWARD NEAL

St. Francis Xavier Catholic Church overlooks Chinese Camp from a hill east of California Highway 49. Erected in 1855, it was the first church in the area. The original belfry and steeple were replaced by the small cross in 1949.



sun-scorched field. The swords slashed, the spears flew, and more than 100 shots were fired. Yet, there was no victor. The local sheriff saw to that. When the smoke had cleared the casualty list stood at four dead and four wounded. Not one combatant had been shot. The sheriff had stopped the fight before a face could be saved, before one man's honor could be restored.

All tong members were disarmed, and some 250 were sent to jail. The war at Chinese Camp was over and, even if there were no winners, all whispered a sigh of relief. Chinese Camp could once again go back to its life of relative peace under the wide branches of the beautiful "trees of heaven."

CHINESE CAMP TODAY: The Chinese trees are still there, shading the quiet streets of what is now an agricultural community with few more than a hundred residents. So, too, are some of the buildings from gold rush days. The old Post Office is still in use. The Wells Fargo building is now in ruins. The quaint St. Francis Xavier Catholic Church still sits high on a hill above the town as if to remind us that all who lived in Chinese Camp, during those exciting days, were not Chinese.

The remnants of the gold rush remain, both abandoned and preserved by continued use. Yet, there is no evidence, no scars of battle on the fields, to tell us: "Here . . . there was once a war!"

Menal Ruda

E SILENTLY slipped around a bend in Lake Mead's long shoreline-and there they were: a small herd of desert bighorn sheep. They hadn't heard us; but now, they saw us. They fidgeted, they stared, but they didn't run. My wife, Iola, and I quietly lifted our paddles out of the water and let the lake's current slowly pull us closer to the sheep.

If we could convince them in the next moment or two that we meant them no harm, they might stick around and let us take pictures.

So far, so good.

Then, something else happened. A whining reel disturbed the silence we had been trying so hard to protect. Its whine was demanding. A bass had attacked the lure I had been dragging behind our canoe. And it wasn't a small one.

This turned out to be one of life's frustrating moments. A quick action on my part would startle the sheep and they unquestionably would take off up the hill and disappear quickly from sight. But the lack of quick action could cost me the pleasure of fighting one of Lake Mead's lunker bronzebacks.

Of course, at that time, I didn't know it would turn out to be a lunker. Up until then, all we had caught were one- and two-pounders.

Like I said, it was a frustrating moment, but it happens everytime we go canoeing on Lake Mead. We are plagued by frustrations. There always seems to be a need for a choice. "Shall we stop and investigate a particularly promising rock outcropping, and paddle faster later to make up the time, or shall we continue leisurely and photograph those towering walls in the distance before dark?"

The truth is: There are simply too damn many things to do.

Sure, a person could jump in a power boat and scoot around the lake in a by AL PEARCE

couple of days-but all he has had is a boat ride. It takes a canoe to really see the lake-any lake. Wildlife doesn't run before you get there. Fish aren't scurrying in every direction in front of a propeller-and it's quiet; pleasantly quiet.

But it sure is hard to get everything done. Every time I pull a canoe out of Lake Mead, I promise myself that the next time will be different. The next time I'll get around to looking at that old gold mine; I'll take an afternoon and hike into that old ghost town which rarely sees people. I'll even spend a few minutes turning into those promising coves which appear to have been created only for the purpose of bringing a bass and a fisherman together.

There are more then 500 miles of shoreline on Lake Mead-and I haven't even covered half of it-despite the fact that the first time we went canoeing on that lake, we had intended to go from the river's mouth to the dam. Those had been our plans. We figured our first trip would take care of this part of the lakeand a second trip would handle the Overton Arm and we would have done our thing.

But we never made it to the dam that first trip-nor the second. We didn't make it on the third trip, either, for that matter. We keep going back, hoping that this time we'll see the things we missed on the trip before.

The Colorado River enters Lake Mead a few hundred yards above Pierce Ferry. There is a strange separation between

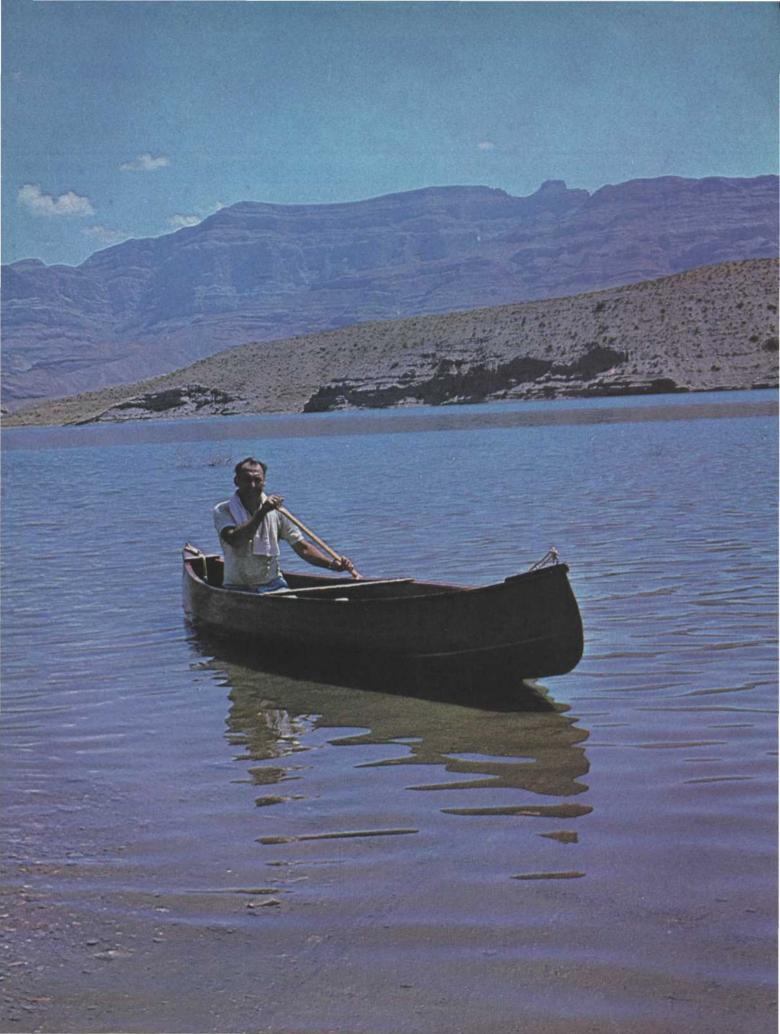
The author brings his canoe into landing at Pierce Ferry on Lake Mead just below the point where Colorado River merges into lake. The area is rapidly becoming a popular canoeing spot.

this area and what we have come to know as civilization. There is a touch of it here and there. Back in the 1930s, the CCC boys did a little work here. There's a campground, but rarely any campers.

It's at the end of a dirt road that angles off the paved Pierce Ferry Road. The pavement drops down the other side of the hill and wanders down to South Cove. That's where most people go-but not so many that they crowd the upper reaches of Lake Mead. It's so vast that a thousand boats seem like only one or

By road, it's only a hop, skip and a jump from South Cove to Pierce Ferrybut by canoe, it's a mighty long way to paddle; especially when paddling is constantly interrupted by the promise of something exciting.

The isolated shoreline is constantly beckoning a finger and making the summons more enticing by displaying miles of promising geology. As sort of a rockhound, I always like to look. I remember a friend of mine who answered a beckoning finger and wound up with 500



pounds of quartz crystals—a lot of it in large pieces!

There is a problem involved in canoeing this part of the lake. Nature has her own ideas where people should camp. Rock cliffs and sloping mountain sides do not good campgrounds make. And to reach out from one point to another in a canoe more or less determines the amount of extra time the canoeist has for looking.

Or, more precisely, those areas that nature selected for camping are far enough apart to demand a choice on the part of the man—or woman—with a paddle.

It's that choice again.

You can take it leisurely—if all you want to do is slowly canoe from one point to the next. However, you must keep the fact in mind that if you stop somewhere to investigate this, that or something else, it's going to take some hot paddling to make up the lost time.

For example, after you leave Pierce Ferry, you pass through Iceberg Canyon. The walls are straight up and down. There is no place to camp—unless you tie up against the wall and sleep in the bottom of the canoe—and if you linger somewhere, you might have to.

However, beyond Iceberg Canyon, the lake opens its arms like a long separated lover and offers the canoeist several camping spots.

The same thing is true out of South Cove. Here, it's Virgin Canyon; and again, once through the canyon there are numerous sandy beaches for camping.

Because of these canyons, I should perhaps take a moment for a word of caution. It is a long way between good camping areas—and if the wind comes up, it's tough canoeing through these canyons. The water gets angry, it boils and it has a tendency to put a bit of itself in canoes.

This is the uncomfortable part about trying to sleep in a canoe in the canyons. If there is no wind, fine. But if the wind does come up, it can get a bit uncomfortable.

If you'd like to try canoeing the lake—it's getting to be more and more popular—I might suggest that you first make the trip with someone who has been on the lake.

Such a person is Fran Wilson, who, by the way, is organizing a week-long trip during the Easter school vacation week. She proposes, along with her husband, to canoe from Pierce Ferry to South Cove—the same section we've been talking about.

Taking a week for this trip makes it very comfortable. It gives the canoeist time to see everything. Fran, who lives in nearby Meadview, is an experienced canoeist and she and her husband have organized several canoe clubs in South-

ern California.

I learned about the trip when I met her last August. "Anybody can go," she said. "The more the merrier. We plan to take off from Pierce Ferry and stop at different places for a couple of days. This will give us time to hike into that old ghost town and possibly explore an old gold mine."

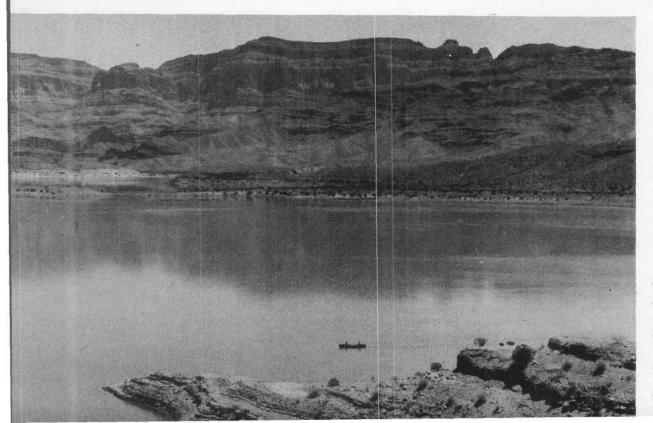
That't just what I've been trying to find time to do for a long time; but, unfortunately, I won't be able to take the Easter trip.

Anyone who might be interested can write to Fran at: Box 2424 Meadview Route, Dolan Springs, Arizona 86441. There is no charge for the trip; but you must furnish your own equipment.

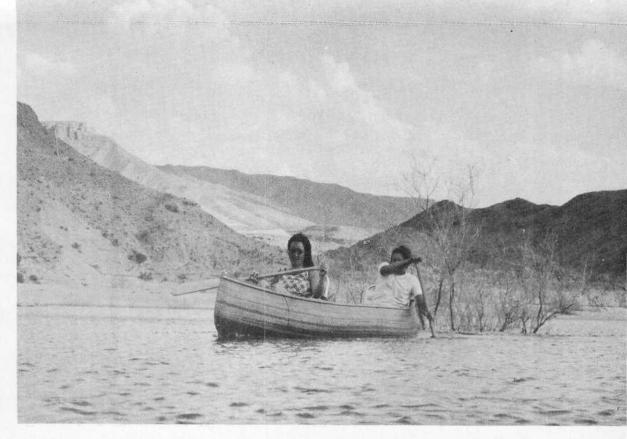
The trip Fran is planning is about 20 miles, maybe 25. It passes through Iceberg Canyon where the geology is overwhelming—nature sure got angry here once upon a time.

Just beyond this canyon I once watched a coyote sneak down to the water's edge and pick up a dead fish and carry it back to its mate. That crazy coyote sure must have been hungry. It came out into the open, in plain sight and cautiously, with one eye on us, tip-toed to the water's edge and snatched that fish—out of the jaws of death, so to speak.

It then turned around and took off like a scalded cat for its mate. I wheeled our canoe into the beach and followed their



Canoe is dwarfed by spectacular mountains bordering the upper reaches of Lake Mead. The river enters to the left of photo.



Kathy and James
Ward paddle canoe
near Sandy Cove.
The sandy beaches
in background are
popular camping
areas.

tracks. I never saw either of them again; but we did wind up camping in that spot for the night, rather than a little farther on as we had planned.

Between Pierce Ferry and South Cove, the geology changes frequently. It's open and inviting where the Colorado River joins the lake—although the mountains here are one long series of conflicting inclines and anticlines. The numerous strata are more multi-colored than a rainbow and when hit just right by reflected sunlight from the lake, they become like a kaleidoscope dancing in the distance.

Here is the place to keep a camera handy. Remember, the Grand Canyon has just given up a few hundred yards behind you—but not completely. The geological strata which give color to the Grand Canyon are still alive; but disappearing as you continue away from the mouth of the river.

If you look back south, just before you lose sight of Pierce Ferry, you'll see Grand Wash. Like the Grand Canyon, it's a bank of different colored geological strata, reaching for miles into the fading distance. The first visible stratum closest to the bottom was formed about 60 million years ago.

As you turn the bend from Pierce Ferry, it's difficult to determine just where the lake goes. It seems to disappear in the cliffs lying on the horizon ahead —

quite a way ahead. But as you draw nearer, you'll notice a gap. This is the beginning of Iceberg Canyon and whre the lake becomes a river again for a short distance.

Just as you enter the canyon, there is a sort of island to your right. It's more like a giant rock sticking into the air; but between this giant rock and the towering walls of the canyon, there will probably be a bass, maybe even two. Try it!

Iceberg Canyon really isn't very long, nor are its walls really very steep. But the water is deep and when the wind howls across the lake you just left, it can get somewhat choppy. When there is no wind, however, it's comfortable and smooth, with just enough current to push a canoe along with little effort on the part of the people inside with the paddles.

Emerging from the canyon is an experience a canoeist is not likely to soon forget; it's like walking from one part of Disneyland to another. Everything is suddenly different.

To the right is the huge Iceberg Bay that reaches for miles back into terrain that appears to be totally unfamiliar with the footsteps of man. But there is an old gold mine back there; and there is an old ghost town that only knowledgable boaters are generally privileged to see. It really takes a guide—someone who has been there before—to hike from the water's edge to the old ghost town. Fran

Wilson said this is one of the things her group plans to do this Easter.

But as you emerge from the canyon, the first thing you generally see is a "wall" of debris separating the main body of the river from Iceberg Bay. To the left of this wall is the main body of the lake and is sharply contrasted from the water you just left and the bay water in that it's clear and clean—not muddy and full of silt.

Your first impression when seeing this "second" lake might be one of disappointment. You suddenly realize what you have let yourself in for. It's a long, long way to the next narrow spot—and no place to camp except in Iceberg Bay; and it's a long way across Iceberg Bay.

If it's early in the day, you may escape the feeling of disappointment and experience instead a feeling of anticipation; given birth by the sudden realization that there is a lot of new country and experiences ahead.

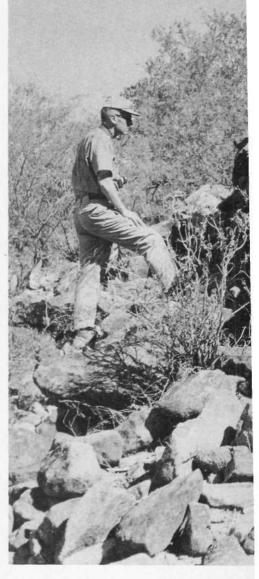
This particular section of the lake is surrounded by cliffs and large canyons that seem to almost merge with the water. There is an island off to one side—good bass fishing between it and the shore.

Then the water narrows again. Along this stretch of "narrows," there are several small coves working back into the surrounding land. A couple of them, if

Continued on Page 40

Trincheras Puzzle of the Southwest

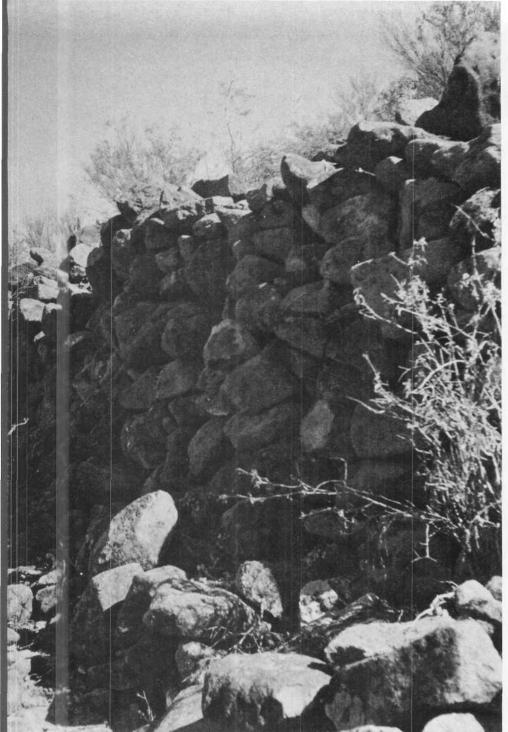
by ROGER MITCHELL



HE SOUTHWEST is full of mysteries and one of the most puzzling is what happened to the ancient people who inhabited this area 1000 years ago. What happened to the cliff dwellers? What caused them to abandon their homes and fields and seemingly vanish? Was it drought, foreign invader, or what?

Related to this mystery, an equally puzzling story exists in the border country of western Arizona and Sonora. There, on certain hillsides, can be found extensive systems of man-made rock terraces. Why they were built and who built them is largely a matter of speculation.

The ancient people who built these terraces are usually referred to as the



that veteran explorer of unknown Mexico, Carl Lumholtz, spends a whole chapter in his book, New Trails in Mexico describing the Trincheras site. Like most of those who followed him, Lumholtz thought the terraces must be defensive fortifications. No other explanation seemed to fit so well.

As scientific knowledge grows, more Trincheras-type sites have been found. In the United States, at least seven terraced hillsides have been found on what is now the Papago Indian Reservation, and 13 other similar sites have been found elsewhere in the Southern Arizona border country. Across the border in Sonora, Mexico, at least six other sites

have been identified. It seems reasonable to believe, however, that many additional sites await discovery south of the border.

Typically, these Trincheras sites are found on hillsides. Walls of rock five-to-ten-feet high, forming a terrace ten-to-twenty-feet wide, contour horizontally around the hillside. There may be several dozen of these terraces at any particular site. At some locations, like Black Mountain near Tucson, man-made trails and petroglyphs may be found near the ruins. Whether these features were made at the same time as the terraces remains unknown.

Pottery sherds may be found at many of the Trincheras sites. The markings on these sherds suggest the Trincheras peoples may have been a part of the large Hohokam Culture from which today's Pimas and Papagos may have descended. This remains a point of archeological controversy. The Hohokams occupied mostly the valleys of the Gila, the Salt and the Santa Cruz rivers, but their influence no doubt spread into adjoining areas. Earliest traces of the Hohokam

"Trincheras Culture" after the Spanish word trincheras, meaning trenches as might be found in a defensive fortification. The first and largest Trincherastype ruin to be discovered was in the Magdalena Valley of Northern Sonora. Today, the name Trincheras applies to both this specific site as well as the culture in general.

The Trincheras site in Sonora was first described by Juan Mateo Manje, a soldier who accompanied Father Kino across Northern Mexico in the late 1600s. Padre Ignacio Pfefferkorn, another 18th Century Jesuit missionary, also mentioned the ruins in his writings. Around the turn of the 20th Century,



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For further information write: OREGON GOLD DREDGE Mohawk Star Route 1A Springfield, Oregon 97477 Phone (503) 747-6069 Culture go back to around 300 B.C. Their culture grew for 1600 years until it reached its zenith around 1300 A.D. Then, within a century, the Hohokam appears to have abandoned their villages and extensively irrigated fields, and mysteriously dispersed themselves to the four winds.

Today, it is relatively easy to reach Trincheras, the best and biggest of these terraced hillsides. Mexican Highway No. 2 more or less parallels the entire border in Northern Sonora. At a point 20 miles east of Altar and 26 miles west of Santa Ana, a dirt road starts south through the lonely desert. A sign on the highway points to the turnoff and reads "Trincheras 33 Km." The road is graded dirt, and while it is a very good dirt road by Mexican rural standards, it is nevertheless very dusty.

At a point 12 miles south of the paved highway, you will cross the old dirt road which, at one time, was the main link between Santa Ana and Caborca. In this area is an extensive archeological site where a village of ancient Trincheras people once lived. The site, named La

Palaya after a nearby ranch, covers an area two miles long and one-and-one-half miles wide. Pottery sherds found here are similar to Hohokam pottery found north of the border. This pre-Columbian village was probably occupied continuously between 800 and 1100 A.D. If the terraces at Trincheras were indeed a defensive stronghold, they must have been used by the people here at La Palaya. The distance between the two points is only seven miles and the pottery sherds at both locations are identical.

Continuing south on the dirt road, you will cross a large sandy wash. Here, you will get your first view of the terraced hillside to the south. The modern village of Trincheras is but a mile beyond. Go straight south past the edge of the town where the road suddenly ends, blocked by the railroad tracks. It is only a short walk of a few hundred yards to the lowest terraces on the other side of the tracks.

An archeological survey of the area produced an abundance of pottery sherds, manos, metates, hammerstones and shell ornaments. This accumulation of artifacts suggests that the site was continuously occupied, and did not serve solely as a defensive fortification. In addition to the rock walled terraces, circular rock rings on some of the terraces suggest foundation stones for small dwellings.

When you climb the hill from the north you can appreciate how difficult it would be for an invader to attack the hillside. He would have to fight his way up and over a never-ending series of walls. The defenders would have a strategically advantageous position. For this reason, everyone who visits the ruins comes away with the belief that the terraces were defensive fortifications. This theory appears the most logical, but it has one serious flaw.

The south side of the hill has little or no terraces. If someone wanted to attack the hill, all he would have to do is come up the unprotected south side and sweep over the crest to the defenders below. The tables would then be turned in favor of the invader. Surely the Trincheras people recognized this, yet if this were a fortress, why would they leave one side unprotected?

Several alternative theories as to why the terraces were built have been

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31808 Camino Capistrano, San Juan Capistrano, California proposed, but they have even bigger flaws. It has been suggested that the valley was once flooded and this hill provided an island retreat from the rising water. There is no geologic evidence to support this idea, and it is further discredited by the La Palaya site. How could Trincheras people have lived there 300 years if it were under water?

Another interesting idea is that the terraces were built to grow a particular type of plant which could not stand the harsh direct rays of the sun. By building the terraces on the north side of the hill, the sunlight would strike the crop at a more oblique angle and not directly. This theory might have more validity if all the terraces were built on the north slope in all locations, but they are not.

Current archeological thinking seems to be that the terraces were built for several purposes, and while those in Mexico may be 1000 years old, some in Arizona may have been built as late as the 1700s when the fierce Apache was on the rampage. There may be four basic types of Trincheras sites, based on what they were originally used for. First and foremost would be the defensive sites characterized by stone walls and bastions having a commanding position over the surrounding countryside. Next might be the habitational sites where the remains of house rings and pottery sherds might be found in great number.

The main Trincheras site seems to fit best in this category. A third type might be built largely for ceremonial purposes. Petroglyphs rather than pottery sherds might be found here. Several sites in Arizona seem to fit this pattern. A fourth type terrace site might be built predominately for agricultural purposes, although none found to date fit this mold.

Desert readers might look at the ruins and come up with still other ideas. What do you think took place here?



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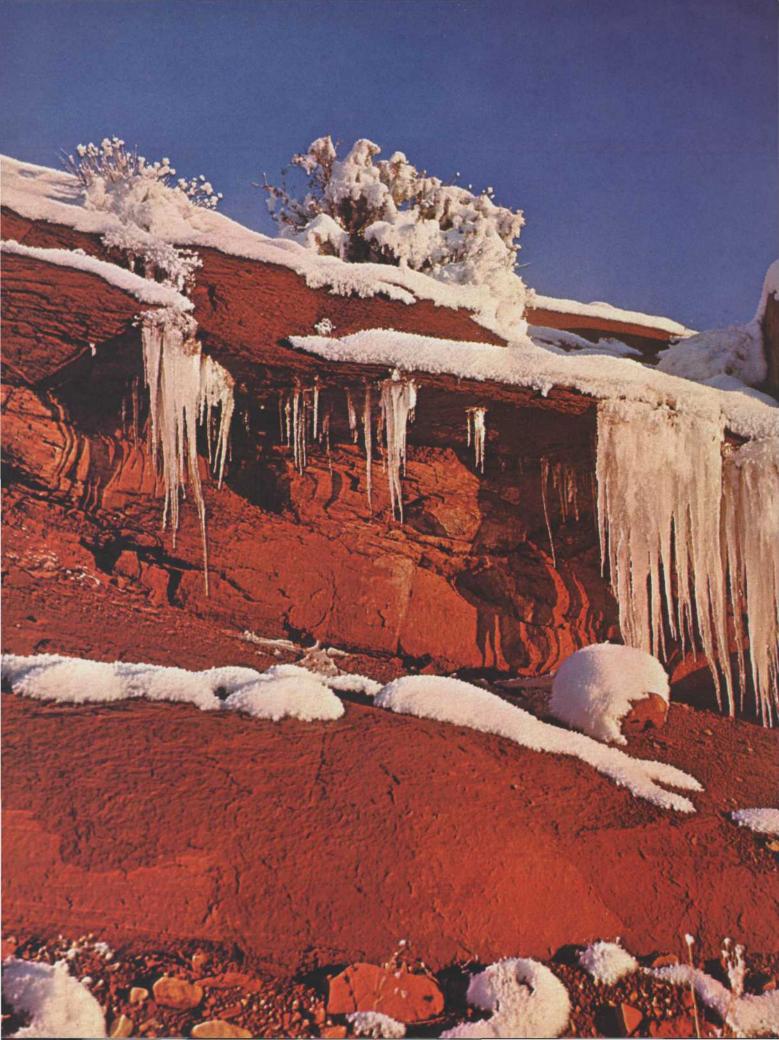
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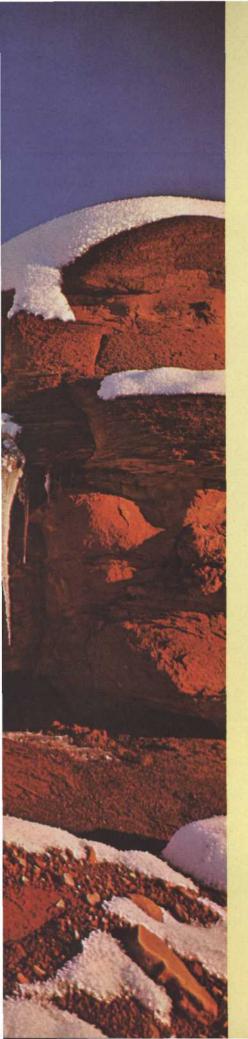
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A Creek Called Onion

by F. A. BARNES

HE FIRST time I saw Onion Creek I couldn't believe my eyes. That was seven years ago. Today, after threading my way through the chromatic maze of that odorous stream countless times, in every season and all kinds of weather, I still stand in awe whenever I pause beside the flowing water and look about me.

My wife and I were first introduced to the sheer loveliness and soaring majesty of the complex grottoland of Onion Creek by Lin Ottinger, of Ottinger Tours in Moab, Utah. To us, that introduction was memorable. It showed us a kind of natural beauty that we had not known existed, absolutely unique, one of a kind, in many ways.

To understand and appreciate the un-

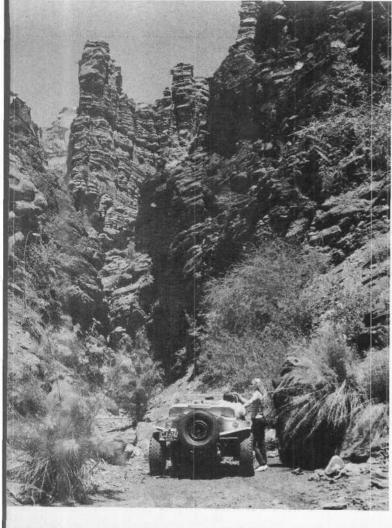
Onion Creek grottoland in the winter.

usual nature of Onion Creek, it is necessary to know something of the geology of the land that surrounds it.

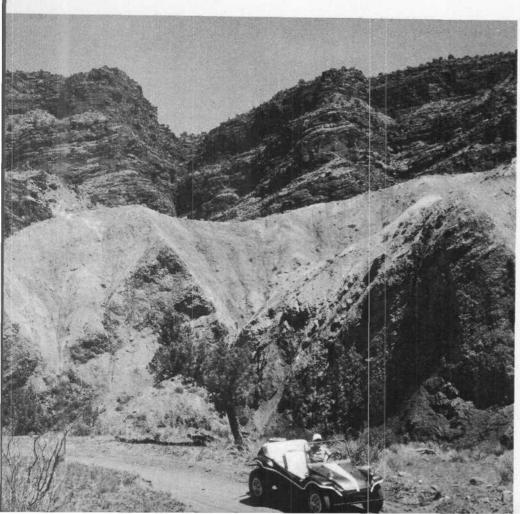
Only a professional geologist, one familiar with the unique structure and history of the vast Colorado Plateau of the Four Corners area, could fully explain the complex geophysical events that formed Onion Creek and the strange valley it drains. But perhaps a simplified description will help those who visit this region to gain some degree of understanding of the wonders they are seeing.

Two major geological events contributed to the formation of Fisher Valley and Onion Creek. One was of such magnitude that it formed a whole range of mountains. The other was smaller, but still gigantic by human measure. The scale of time against which these events occurred is almost beyond human comprehension, but the end results are not beyond human appreciation.

Picture a vast, multi-layered land con-



Left: A few Onion Creek sidecanyons can be traveled by off-road vehicle until the wash bottom gets too narrow for further progress. Below: The road beside Onion Creek travels through the gigantic exposure of gypsum that fills the valley above the grotto system. The spring that gives the creek its odor and name seeps from this mass of colorful mineral.



sisting of many thick and ancient strata of sandstone, sediment, volcanic ash, mudstone, seabottom limestone, shale and the petrified remnants of immense Sahara-like deserts. The crust of this sprawling land was then several thousand feet thicker than it is now.

Next, speed up time by a million or more to one and watch part of this ancient land being pushed upward, broken and cracked, by the irresistible upthrust of igneous rock from deep beneath the earth's crust. See an enormous "blister" form on the tortured land, one in which the lava-like rock never actually breaks the surface, but instead forms a stupendous "pimple" of ruptured, bulging layers of rock.

Watch this distorted land again, as the same subterranean forces squeeze a gigantic mass of gypsum and other pressure-fluidized salts upward from far below, upward into some of the sloping rock layers near the crown of the mountainous bulge formed earlier. This massive "gypsqueeze" does not break the surface of the land either, but fractures that surface still more, making it more vulnerable to later erosion.

Now see still more eons of time compressed, as three, four, five and six thousand feet of rock and sediments are carried away to the oceans, leaving behind the harder, more resistant rock formations, but removing all that was broken up by the two violent events described, plus others. Much of these countless megatons of rock and sand and other deposits are carried away by the Colorado River, an ancient waterway even then.

Today, the Colorado River still wends its way through this tortured land, but those geologic events of so long ago have left their mark, a beauty mark, upon a region that would otherwise have been less magnificent.

With all the fractured overburden gone, the harder core of that ugly "pimple" on the face of the earth has become a lofty and beautiful range of alpine mountains, sitting proudly in the midst of vast red-rock, desert-canyon country. These are the La Sal mountains of southeastern Utah, the mountains that make such a picture-window view from Moab.

The "gypsqueeze" that intruded into deep layers of red-hued sandstone also added to the beauty of a land already incredibly lovely. A series of radiating can-

26

yons were created by erosion in the relatively unbroken but tilted strata that formed the foothills of the La Sal mountains. Where these canyons encountered the Colorado River gorge, that deep and narrow gorge broadened, reaching the distant mountains.

This broad, cliff-walled amphitheater begins just 13 miles upriver from Moab Valley, and is crossed lengthwise by a paved state highway, Utah 128. Three major canyon-valleys reach from this widened rivergorge toward the La Sals. One is magnificent Castle Valley, the next is Professor Valley and the third is Fisher Valley, the strange home of Onion Creek.

Fisher Valley contains three distinct regions in its ten-mile length. All three are bounded on two sides by the sheer walls and talus slopes of elevated plateaus. Upper Fisher Valley is essentially a vast meadowland, boxed in by these walls. It shelters a picturesque cattle ranch.

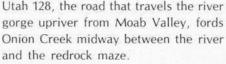
These meadowlands were formed by sediments accumulated behind the now-exposed "gypsqueeze," which for eons served as a sort of "dam." Now, the immense wall-to-wall gypsum intrusion, the second distinct region in Fisher Valley, has been cut through by erosion, and slow seepage from the sediments of the upper valley, plus rainfall runoff from the central valley, have created Onion Creek and its geologically unique gorge.

As the relatively pure waters of this stream pass through the pastel-hued hills of eroded gypsum, several small springs add highly mineralized water to the flow. One such, appropriately named "Stinking Spring," contributes water that has the pungent odor of garlic or onions, hence the name Onion Creek.

After passing through the gypsum area, Onion Creek cuts deeply into the dark red Moenkopi and Cutler deposits that form the third and lowest region of Fisher Valley. There, the winding, twisting stream has formed an incredible maze of very deep and narrow canyons and grottos, and branching, rebranching side canyons. Here, is the truly unique part of Onion Creek.

Below this miles-long, blood-red grotto, Onion Creek emerges to flow through a short but colorful stretch of open, redsand desert before adding its water to the brown flow of the Colorado River.

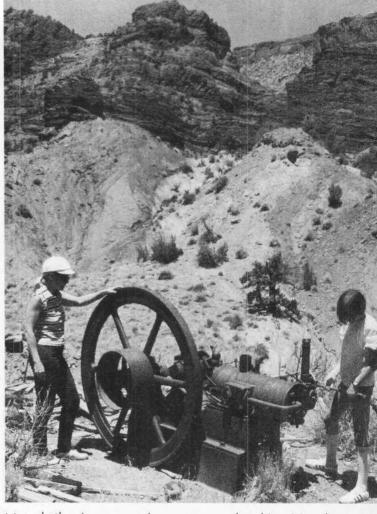
Right: Hiking up some of the numerous side canyons from Onion Creek can be fascinating. One contains an old mine with this old steam winch. Below: The Onion Creek skyline is a continually changing fantasy of weird shapes. Onion Creek trickles by in the foreground



It would be difficult to imagine how to

spend a more unusual and inspiring day than to explore the full length of Onion Creek, between Utah 128 and the springs that form the creek at the base of

Continued on Page 46





An Arizona Ghost Town

Gillette

by IDA SMITH

ILENCE SHROUDED the crumbling walls of the old hotel, once an important stage stop. Desert birds that followed us curiously from tree to tree seemed unafraid because visitors so seldom came to this deserted spot. The little ghost town of Gillette, forever quiet in its desert valley, was hidden by thickets of mesquite and catclaw. Who were the people that populated it nearly a century ago? Who was the young outlaw who brought his riders once to this isolated spot? We had come to picnic along

the Agua Fria river and to take pictures, and the story of the deserted ghost town that once made frontier history intrigued us.

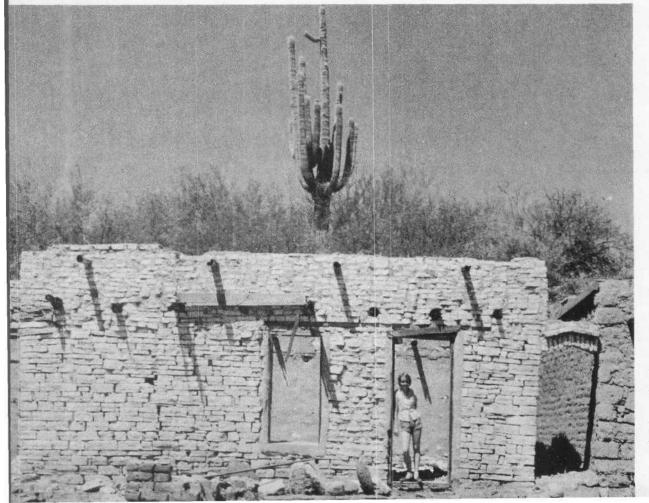
The tall hill that jutted up back of Gillette was once the site of the famous Tip Top Mine. It was discovered in 1875, and other rich discoveries followed.

The town of Gillette was laid out in 1878, according to records, and named after the superintendent of the Tip Top Company, D. B. Gillette, Jr. U. S. Deputy Surveyor C. B. Foster described it

in glowing terms to the *Prescott Enter- prise*; "a 40-acre tract on a low meas overlooking the Agua Fria river, with five blocks containing 20 to 60 lots each. It will be watered by an acequa (irrigation trench) from the Agua Fria. Its streets will be named Main, California, North Pine, Mill and Market."

Lots sold rapidly. "In a few years," said Foster, "we may expect to see shade trees growing along the streets of Gillette as in Phoenix and Florence."

During its lifetime, Gillette had, in ad-



The Burfind Hotel was built of native stones and adobe. It contained 7 units around a small patio. There were two corner fireplaces. Photos by Ida Smith



Street in Gillette where the stage stopped with passengers near the Burfind Hotel.

dition to the picturesque Burfind Hotel, a stage station, general store, post office, blacksmith shop, a ten-stamp mill and two or three saloons. There was no school at Gillette, but eventually one at Tip Top. The peak of Gillette's population was around 100. It was an important stage stop for the Black Canyon Stage Line operating between Prescott and Phoenix. The stage crossed the river to get to Gillette and again on leaving, regardless of high water. There was no bridge. In addition to the hazards of crossing the river, history records several spectacular holdups of the Black Canyon Stage.

Five years after the discovery of silver at Tip Top, the mining company moved its mill from Gillette up to Tip Top. A road was graded through. Water was pumped from various places, including Boulder Creek. During its prosperity, Tip Top had a population of around 1000. Gillette was still the important stage stop and post office, and remained so until the Tip Top mines closed down and the railroad replaced the stage line. Gillette's history covered about 15 years, from 1878 to 1893.

It is estimated that three million dollars worth of silver was recovered from the Tip Top mines. Operations ceased when the ore bodies, recoverable with the equipment of that time, ran out. The price of silver, which had been a dollar an ounce, dropped to 40 cents, making further effort impossible.

"All they had to work with," said the late Oscar Wager of Phoenix, "was hand windlass and blast. Air compression and gasoline engines were unknown. They could only go so deep and then had to quit. The old-timers just scraped it over. There's silver and tungsten and some gold," Wager was positive. "All that's needed is capital and modern machinery to bring it to the surface."

In 1878, Edgar E. Lincoln came to Tip Top and established mining interests there. A year later, Mrs. Lincoln came with their family; two boys and small daughter, Maude. A second daughter, Norma, was born to them while living at their Tip Top-Gillette home.

One day Mrs. Lincoln and the children went down to call on the lady at the stage station. While they were visiting, a band of young men rode up. Their leader

asked if they could have something to eat. While the women were preparing the food, the young men practiced target shooting. Mrs. Lincoln's little boys, who seldom missed anything, watched with interest. Soon, they casually sauntered into the house. "We heard them talking," the boys whispered to their mother, "and we think they're bandits."

The women placed the food on the table and while the strangers were eating, they quietly hurried up the hill toward the mine. They met the men coming down.

When they returned to the dining room, their guests were gone. They had left a pile of silver coins on the table and this note, "Billy the Kid never harmed women or children."

Around that time there were three outlaws who called themselves "Billy the Kid." History does not record all of their travels.

"Mr. and Mrs. Edgar Lincoln were my grandparents," says Lorna Lockwood, Arizona's first and only woman Supreme Court Justice and past Chief Justice. Their daughter, Maude, married Alfred C. Lockwood. They were my parents. Be-

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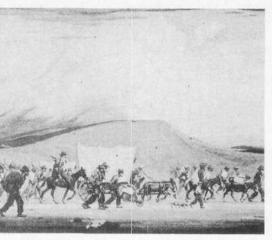
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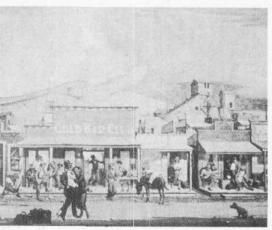
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The Gold Rush



The Mining Camp



The Mining Town



The Ghost Town

Fireplace chimney; all that is left of the William W. [Billy] Cook home at Gillette. Photo by Moulton Smith.

fore my mother married, she was the first school teacher in Douglass, Arizona."

Justice Lorna Lockwood's father, the late Justice Alfred C. Lockwood, was one of the best-known jurists in western United States.

Miss Lockwood's great uncle, Dr. Lincoln, came to Arizona from California, where he had been in the big gold rush. Dr. Lincoln established the ferry at Erhenberg, Arizona, and was later killed by the Indians.

"My grandmother, Mrs. Edgar Lincoln, came on the first passenger train from San Francisco to Maricopa City," says Justice Lorna Lockwood. "I still have the train ticket that brought them. I also have my grandmother's organ that was transported to Gillette part way by stage and part way in a sling betwen two mules."

The late Oscar Wager's parents operated the stage station at Gillette during 1892-1893, together with a restaurant, bar and feed stable. The family came to Arizona in 1884. At one time, they owned the El Dorado, Fourth of July and 76 mines near Tip Top.

Later, Oscar served in the Spanish-American War in 1898, in Bucky O'Neil's troop; and in France during World War I. For a year, in 1903, he was a prison guard at the Yuma Territorial Prison.

It was also from Oscar Wager's reminiscences that we were able to piece together certain parts of the early history of Tip Top and Gillette.

The mines at Tip Top were producing ten-pound bars of silver valued at \$160 a bar. While the company's mill was on a bank at Gillette near the Agua Fria river, the ore was carried down the hill part way by mule and burro trains, and the rest of the way into Gillette by wagon. The return trip carried water from the Agua Fria up to the mines. "They called it a nine-mile trip," said Oscar, "not as the crow flies. A crow couldn't fly up there without hitting the mountain!"

After the ore was milled into tenpound bars, it was taken by wagon to the First National Bank in Phoenix. One day, some men from the vicinity had to make



a trip to Phoenix and agreed to take 15 or 20 bars to the bank. Enroute, one of the bars disappeared and was never heard of again. Intermittently, for several years, treasure hunters dug up the earth between Gillette and Phoenix trying to find it.

Somewhere in the Gillette ruins are the remains of the home once owned by Jack Swilling and his second wife. Swilling was one of the founders of Phoenix, Arizona. He died in the Yuma prison where he had been sent on a fraudulent charge. Swilling and his group founded the city of Phoenix on the site of a vanished pre-Columbian metropolis, and laid out their irrigation canals where the prehistorics had established the first irrigation system in the Southwest. The city of Phoenix today owes its beginning to the perseverance of Jack Swilling.

An old fireplace chimney stands where once the ranch house of William W. (Billy) Cook stood. At one time, Cook was the sheriff of Maricopa County. His ranch house burned down and his wife lost her life in the fire. In later years, Cook owned another ranch along the Agua Fria which became the site of the

Maricopa Audubon Wildlife Sanctuary.

Some years ago, an attempt was made to convert Gillette into a dude ranch. Cabins were built and the old hotel repaired. But it was on the wrong side of the river. When the river was high the guests could not get across. For a long time Gillette was owned by homesteaders. Then it was sold to the Bard Cattle Company.

The dreams of the silver miners, the U. S. Deputy Surveyor and others, lie forgotten in the silent ruins and in the yellowed pages of old newspapers.

The streets of Gillette are overgrown with desert shrubbery, but one lone olive tree stands as a reminder that dreams are important incentives even in a world of inevitable changes.

The ghost town lies about 50 miles north of Phoenix, Arizona, and about a mile west of the Black Canyon Highway. Its ruins have been dismantled by wind and rain and damaged by vandals. From the Agua Fria river (if one can get across it), the road is rough and rocky. The river winds among willows and cottonwoods, sometimes like a blue ribbon, sometimes like a sweeping torrent.



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Roses and

by MARY FRANCES STRONG photos by JERRY STRONG

Chalcedony roses can be used "a la natural" in jewelry as this pendant demonstrates. They also tumble well and a few specimens are large enough for slabbing.

HEN WE are roaming the desert back-country and encounter washed-out tracks, sandy washes or steep, rocky grades, it is merely a matter of "putting it in four-wheel-drive" to traverse these difficulties. At such times, we often discuss what it must have been like to cross the Great Mojave Desert 60 or more years ago. Intrepid, indeed, were the early-day motorists who, by the thousands, crossed the hot heart of this arid region during their journey to the golden land of milk and

honey-Southern California.

Eleven miles east of Ludlow, California, lies an abandoned six-mile section of the National Old Trails Road—once the main artery across the Mojave Desert. Much to our surprise, exploration along the road not only produced old bottles and memorabilia, but also two interesting mining operations, a scenic four-wheel-drive trail and a rock collecting locale—all within a radius of 10 miles. The National Old Trails Road offered "something for everybody."

The country surrounding the perlite quarries contains nice chalcedony roses. Specimens are scarce close to the road, but scouting around could fill a rock sack.



We had been checking out the new access route to the Bristol Mountains chalcedony rose area and found two giant culverts, under the freeway, gave good access to the location. Large roses appeared to be rather scarce immediately adjacent to the road and perlite quarries. However, we picked up a good, one-pound specimen for cutting and could have easily filled a small rock sack during the hour or so we spent at the locale.

The Klondyke Perlite Deposits, as this region is known, was first mined in 1948 for experimental purposes. Perlite occurs here in irregular to lenticular beds, interbedded with tuffaceous sediments, tuff and rhyolite flows. It is a sizable deposit. In late 1952, the American Perlite Corporation began open pit mining. The beds were blasted and the ore loaded on trucks for hauling to a crushing and screening plant at Klondyke siding.

Our checking trip concluded, we were headed south, towards the highway, when we decided to explore an old road running east that had been noted on previous trips. It quickly became apparent this was not just another desert trail. Almost at once, colorful, broken bottles were seen on both sides of the road. Among them were blob-top and blownin-the-mold types which included a large green "W. B. Caldwell's Syrup Pepsin" and "Chamberlains Med."

In about a mile, we junctioned with a road leading south to Klondyke Siding (only tamarisk trees remain at the site). It was marked by the familiar metal pole used for early Automobile Club signs. "We must be following a section of the original National Old Trails Road," I exclaimed. By now, our interest was really aroused and we became as excited as hounds upon picking up the scent of a fox. There is a special thrill in traveling routes of the pioneers and always the possibility of finding an old bottle or memorabilia discarded years ago.

Bottles Along the National Old Trail

The next three miles were rough and resembled a giant washboard as it dipped through numerous small washes that cut the broad alluvial fan. Obviously, this had not been a fast-track route.

At another junction, a skeletal road led south to Siberia Siding where stone ruins and two palm trees still survive. These sidings spotted across the desert were the life-lines for the first motorists. Water, and sometimes gasoline, could be obtained in emergencies.

From Siberia Siding we continued slowly southeast and eventually reached Smoke Tree Wash. The previous day we had four-wheeled up this broad sandy watercourse for many miles. Four-wheel-drive is advised due to stretches of deep sand through groves of smoke trees and several rough, rocky sections. We collected a few obsidianites and a couple of colorful jasp-agate specimens along the way, but they were not plentiful enough to be considered a field trip area.

After crossing the wash, the National Old Trails Road turned abruptly south and a high, rounded cinder cone loomed ahead on the east. The road became sandy and, after crossing another wash, it turned east and climbed the lower flanks of Dish Hill.

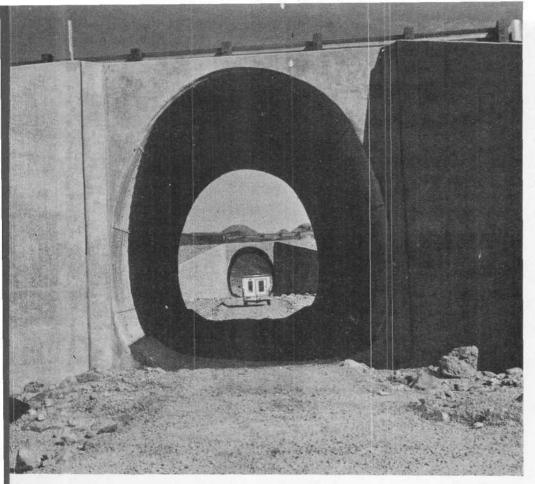
We found ourselves on a section of the road which was still in fair condition. Hand-built rock work supported the road 25 to 30 feet above heavy sand that had been wind-deposited along the base of the cinder cone. We were fascinated by the beauty of the rock work—perfectly fitted mosaics done years ago. Storms have taken their toll and cut back into the



Photo courtesy State of California, Department of Transportation, San Bernardino Division. The National Old Trails Road across the Mojave Desert required constant hand maintenance during the '20s to keep the traffic rolling.



Weathered buildings and ore bins mark the site of the cinder mine which operated in the '50s.



Freeway engineers utilized local material for their road work and provided huge culverts which give access to the collecting area.

road until, in a few places, there was barely footing for a car.

Evidence of car trouble was seen all along the road and the number of discarded parts was amazing. Jerry is interested in such things and we stopped often to examine them.

Slowly driving around Dish Hill, we made the "discovery of the day." "Stop," I hollered and jumped out. I could hardly believe my eyes. Perched on the embankment was a jelly glass. Complete with lid and tinted purple, its remaining contents had been sun-baked, stone hard. I was mighty tickled, since I collect fruit jars and old canning equipment. I was also pleased to have been the one who spotted it. "Old Dad" sits higher and always seems to see everything first.

Completing the drive to Trojan Siding, we side-tracked up Dish Hill to look over a cinder mine operation. Active in the 50s, it is now idle, though large reserves of cinder remain. They are composed of scoriaceous fragments which range from dark-red to black in color. This material has great strength, making it valuable for use as an aggregate in plaster and

stucco. Open pit mining was used and the blasted rock fed into a conveying, crushing and screening system. Coarse and fine aggregate was produced. Only collapsing loading bins and two wooden camp buildings remain today.

From here, we headed south under the railroad tracks to join Highway 66. Remnants of the Old National Trails Road could have been followed four miles east to the site of Bagdad. Now, completely razed, it was once an important link in the chain of mini-communities that served the railroad and the Road.

Following the completion of the Atlantic & Pacific Railroad (now Santa Fe) in 1883, a wagon trail developed along the right-of-way between Daggett and Needles. This route became the National Old Trails Road when automobiles came into general use. Never more than three miles from the railroad, it was a safer route across the desert than the existing Old Government Road nearly 40 miles north. Emergency water could be obtained at all the sidings and most of the ''little towns'' offered gasoline, supplies and some type of overnight accommodations.

By 1923, the National Old Trails Road had become the main highway across the Mojave Desert. Generally eight feet wide along its entire length from Barstow to Needles, it was plagued with such inconveniences as chuck holes, sandy stretches, dust and more dust plus gut-shaking, rocky, rough sections which took their toll of man and automobile. Two days of hard driving, mostly in second or low gear, were required to cover the 170 miles.

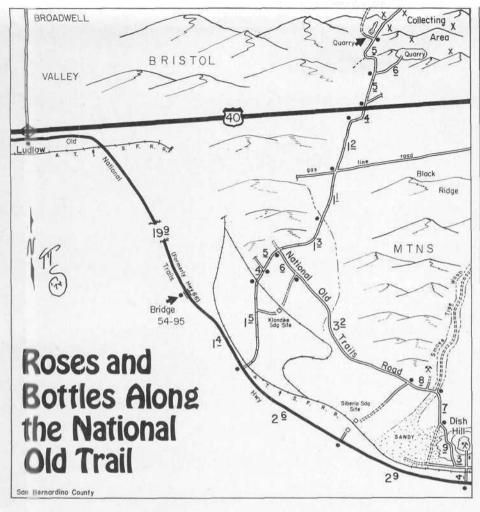
In the reminiscences of E. Q. Sullivan, first State Highway District Engineer for District VIII which included San Bernardino County, he recalls that over 300 vehicles a day traveled the road enroute to Southern California. Passing was impossible and cars became bunched together in long lines behind the lowest one. When opposing traffic was met, drivers were supposed to "turn out" leaving two wheels in one rut and, hopefully, keeping the other one on the shoulder.

Such conditions resulted in unusual accidents. The new District Engineer was to learn this during his initial inspection trip between Barstow and Needles. He had been advised his first priority was to improve the desert section of the National Old Trails Road.

Justly proud of his brand new Reo, Sullivan was determined to complete the trip in one day. At one point, a long caravan of cars was met. Just as a pass was being completed, one car swung back into the tracks. Automobile sides scraped together and, since the other car had a large kerosene stove tied to its side, the Reo took quite a beating.

The road had also taken its toll. All of the Reo's brake rods had crystallized and broken. In addition, its wiring had shaken loose. After 20 hours of driving, Sullivan arrived in Needles at 11 P.M. sans any brakes or lights. It had been a long, one-day drive! On his return trip, an overnight stop was made at Ludlow.

At one time, the county had oiled the National Old Trails Road in an attempt to improve it. This treatment had not been successful and the surface had long since disappeared. However, Sullivan had noted a ten-mile stretch near Chambless that had remained in good condition. Since oiling of dirt roads had fallen into disfavor, he pondered the reasons why one small section had held up. He kept thinking about this as he formulated his plans.



Sullivan finally obtained samples from the successfully oiled section and examined them under magnification. He discovered the voids in the aggregate were not filled by oil but that the particles were thoroughly coated. Examination of oiled road which had failed disclosed the voids between particles filled with oil. A new method of improving dirt roads was being discovered!

Using the wind, dust was removed from the road surface by dragging, then regulated amounts of oil were applied to the winnowed particles that remained. Traffic was allowed to consolidate it with help from continuous reshaping by graders and broom drags. For his pioneering efforts in road construction, Engineer Sullivan is considered "the father of light bituminous pavements."

The successful surfacing of the ''road across the Mojave Desert'' brought engineers from all over the West as well as from desert countries throughout the world. They came to study the new technique which improved desert roads when lack of finances prevented conventional paving. In just years, Engineer Sullivan and his crews make it possible to race

across the Mojave Desert at 35 miles per hour and easily make the trip in one day!

Passing years brought many improvements to the National Old Trails Road. For many decades, travelers knew it as U. S. Highway 66. Fame came late in life when a television series romanticized the adventures one might experience following the route across the United States. Today, a modern four-lane freeway across the desert (Interstate 40) replaces it. However, large segments of Highway 66 are still in use and bear the name of "Old National Trails Highway." Several sections of the original route remain and the Klondyke to Trojan Siding portion is probably the most well-defined.

Exploring along the old road brings on waves of nostalgia and visions of the "good old days." It is a time to recall the endeavors of stalwart men and women who opened up the West—first by wagon, then by automobile. It is good to recall their courage and way-of-life, based on the Golden Rule. Above all else, they loved their family, their land and their country. We, who follow in their footsteps, would do well to emulate their ideals.

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Ridge Route: Fou



by JIM PRICE

Right: The original Grapevine as viewed in 1919. Below: Wooden guard rails on the Ridge Route were heralded for saving many lives. Photos from California Highways by Ben Blow.

ANY DRIVERS, whisking along California's Interstate 5 between Los Angeles and Bakersfield, are unaware of the Ridge Route, a narrow, twisty cement ribbon which pre-dates the existing eight-lane freeway by some 55 years. And further, most drivers probably don't care that such a road is still in driving condition. But there are those few, both old-timers who drove the Ridge Route in the '20s and '30s and some adventuresome souls of today, who take advantage of a true driving adventure, namely driving the old Ridge Route in the '70s.

The first road between Los Angeles and Bakersfield followed a lengthy, twisty route from Newhall up San Francisquito Canyon to Elizabeth Lake, west through Fairmont to Tejon Pass and then down Grapevine Canyon to the San Joaquin Valley below. Thorpe's Road Atlas of 1911 shows every twist and turn of this road—it must truly have been an ordeal.

A bond election in 1910 led to the formation of the California Highway Commission in 1911. The Commission started with a budget of \$18 million. Mr. J. B. Woodson and Mr. W. Lewis Clark, of Division IV (south to the Kern County line) and Division VII (Los Angeles

County line and South) respectively, had, as one of their prime road-building responsibilities, the job of connecting Los Angeles and the San Joaquin Valley with a new, high-speed State Highway. Mr. Clark surveyed several possibilities for the Los Angeles County portion of the



R ROADS WITH THE SAME NAME

road San Francisquito, Bouquet, Soledad and Mint Canyons, all four of which fanned out from Newhall like spokes of a wheel. However, all were rejected due to length. So, "Clark girded his loins, cinched up some pack mules, and went over the top via what today is the Ridge Route, which then was as trailless as the snows that Peary saw about the Pole." Construction engineers literally blazed a trail, building a highway where no grades or trails existed, while contending with poor water supplies for workers and animals

Meanwhile, Mr. Woodson had two major problems on the Kern County end of the road. From Bakersfield to the Grapevine, the road has to pass "through five miles of the worst adobe soil that can be imagined. It was so bad that a strong horse could not drag a light buggy through it after a rain . . . " Then, the road had to traverse Grapevine Canyon, thus crossing Grapevine Creek, known for the frequency of its flash floods. The adobe swamp was conquered by an absolutely straight cement ribbon, dubbed the 17-Mile Tangent. The road up Grapevine Canyon was built far up the hillsides for protection from washouts

Oil paving of the road was completed in 1915 at a cost of close to \$2 million. The Ridge Route per se—from Gorman to Castaic—had 642 turns in its 36 miles, equivalent to 97 complete circles! Cement paving was completed in 1919 at which time the road was heralded as a great boon to California transportation which ''(cut) off 60 miles of distance by the old route between Bakersfield and Los Angeles and (enabled) automobile stages to make better time between the points named than the train.'' The tortuous trip took, at best, 12 hours. Later,

the road was straightened and widened and an asphalt surface was laid. In driving the road now, one can see the older cement road twisting across the newer asphalt paving.

Respect for the road was uniform among drivers of autos, trucks and any other conveyances which pulled the Grapevine and the Ridge Route. A trucker recalls: "We used to pull into Greenfield (about 10 miles south of Bakersfield) late in the afternoon and wait for the pavement to cool. The highway was

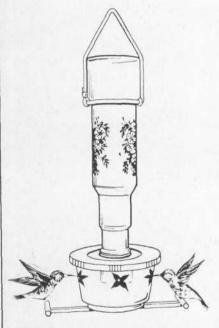
lined with hay trucks, livestock rigs, pipers, tankers, fruit tractors. The drivers walked around, testing tires and checking oil . . . and after the sun went down, the long climb began."

One of the welcome stops along the way was Sandberg's, where travelers could stop to cool their engines after the long, hot climb up the Grapevine in the summer or sit inside by a roaring fire with a cup of fresh coffee in the winter. A 1956 newspaper article reported that Sandberg's owners, "Sara and Lucky

An aerial shot of the Ridge Route looking south toward the top of Reservoir Summit [upper right].



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Palm Desert, California 92260 Calif. Res. add 6% sales tax Stevens are planning to rebuild it to its former beauty." However, a mid-60's article stated that Sandberg's "burned down about three years ago" which is easily verified when one finds the present-day lonely cement foundation where Sandberg's Inn once stood.

The Ridge Route was adequate for a few years, but the growth of Southern California pointed up the need for a new. high-speed road over that route. The new road was begun in 1927, and was routed through the canyons rather than up on the Ridge. The road was a threelane road over most of the stretch, save the Grapvine which was four. The Automobile Club had campaigned long and hard for this road, pointing out in 1933 that savings would be realized in operating costs, in power due to lessened grades, and, most importantly, in time by truckers. Consequently, the new road, which cost \$3 million to build, would pay for itself in the first three years nine times over! The new road was opened on October 29, 1933, cutting off yet another eight miles of the distance from Gorman to Castaic. There was little nostalgic lament about the old Ridge Route. A patrolman on the old road recalls that "the traffic just stopped coming. Within a few months, most of the gas stations and tourist stops had burned to the ground for one reason or another."

The new road was none too safe, though. A 1948 article suggested a sign be erected at both ends of the road stating: "You are now approaching one of the world's most dangerous highways." Due to the three-lane road, steep grades, slow trucks, impatient motorists, variable and inclement weather, and runaway trucks with flaming brakes, a number of bad accidents occurred on the road.

Again, increasing traffic dictated a wider road, and after World War II,-expansion to four lanes all the way was begun. The four-lane road, a major engineering feat, was completed in 1951. However, four lanes still proved to be too narrow. Runaway trucks continued to be a problem on the down side of the Grapevine (the small town of Grapevine was completely wiped off its roadside location in at least two accidents). On the up side, a slow-moving truck passing an even slower-moving truck would cause a line of cars to build up in each lane most

of the way to the bottom of the grade. So, the Grapevine was expanded to eight lanes in 1960 and the whole road was increased to eight lanes in the early '70s as part of the Interstate 5 highway program.

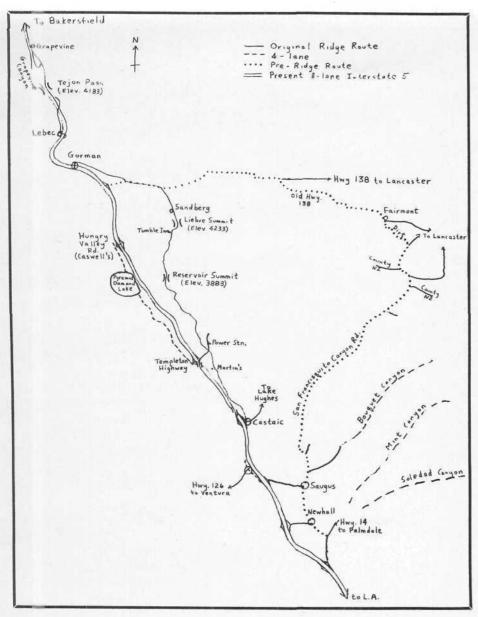
It is possible to travel at least portions of all the roads which have borne the name of the Ridge Route, and exploring these various old roads makes an excellent Southern California weekend junket.

The pre-Ridge Route road is completely traversed by existing paved roads: Old Highway 138 from Gorman to Fairmont and San Francisquito Canyon Road from Lake Hughes to Castaic. The portion of the road from Fairmont to Lake Hughes is discernible from the air; it's a twisty dirt road which heads due south from Fairmont.

The 1915 Ridge Route is the real driving adventure of the group. The road is completely intact and passable from Castaic to Gorman. At Castaic, exit Interstate 5 toward Lake Hughes (it's so marked), and turn north on Ridge Route Road at the stop sign. The road changes from modern pavement to the cement ribbon of 1919 in two miles, and one is immediately thrust backwards in time. The cement and asphalt climb to the top of the Ridge, passing Martin's ranch, a frequent stop of yesteryear. The Ridge Route is maintained to its intersection with the Templeton Highway which exits I-5 and runs east to a power plant.

Beyond this junction, a sign warns "Not a Through Road," but in this instance, it means that the road is not maintained further on. The road twists up hills, down canyons, makes hairpin turns in tight spots, and finally reaches Reservoir Summit (elevation 3883) where a large clearing affords an excellent view of the road behind. Continuing, the traveler winds more, and still more, finally reaching the only difficult portion of the road: a stretch buried by a land-slide. But even passenger cars can make it with a running start, so fear not.

The next point of interest is the foundation of the Tumble Inn, a lodging stop on the Ridge. The road, climbing once again, reaches Liebre Summit (elevation 4233), then drops slightly into Sandberg. Here, one must look carefully to find the cement foundation where the Sandberg Inn stood. The route then begins a precipitous drop to Highway 138 where one then heads west toward I-5. However,



before reaching the Interstate, exit to the north toward Gorman. You are then back on the Ridge Route, and a weather-beaten sign riddled with bullet holes announcing "Gorman" assures the correctness of the route and captures the age of the road. It will not be possible to pick up the old road again until reaching Lebec, after which a few miles of cement can be traversed down to the narrowest part of Grapevine Canyon.

The only other drivable portion of the road can be reached from the new town of Grapevine by heading south on a frontage road, past the remains of an old auto court, then up the hill. The trip is rudely interrupted by a fence, beyond which is the four-lane expanse of I-5 going down the Grapevine.

Suffice it to say that the Ridge Route is a real driving experience, riddled with nostalgia and beautiful scenery. It is suggested, by the way, that a shovel be taken along to clear away any debris encountered on the road. This is an especially good trip in the spring when oceans of wildflowers are in bloom.

Traveling the four-lane road is less rewarding than the twisting Ridge Route; there isn't much of it left. Between Castaic and the Templeton Highway exit, the four-lane is one-half of I-5. At this point, the old four-lane road branches off and heads down Violin Canyon. It continues for five miles until one is abruptly greeted with a "Road Closed" sign. Pyramid Dam in Piru Gorge has just been completed, and the road beyond this point is mostly under water. (Might be an interesting Scuba dive someday!) A short portion of the four-lane can be traveled by exiting I-5 on Hungry Valley Road about four miles south of Gorman. This was Caswell, and a weathered service station frame sits on the side of the road. This exit will be the main entry to Pyramid Lake when it is opened for recreation. The rest of the four-lane is part of the existing I-5 from this point on. Incidentally, the up side of the Grapevine was the four-lane road.

Anyone who drove the Ridge Route many years ago can't help but wonder at the incredible differences in the first and most recent versions of the roads bearing the same name. Two lanes, then three, then four and now eight. Could it ever be a bigger, more splendid example of highway engineering than it is now? No doubt the same question was asked in 1915, 1933, 1951 . . .





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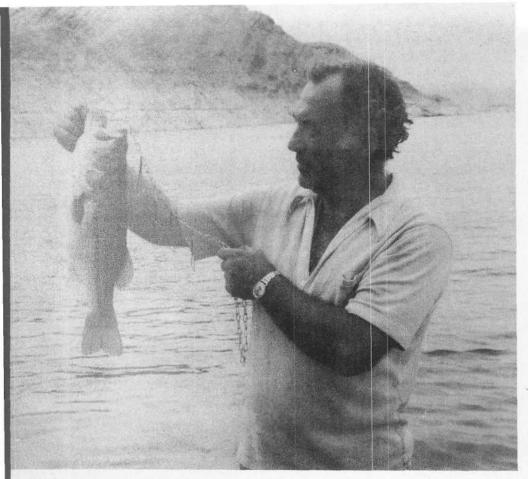
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NEVER ENOUGH TIME

Continued from Page 19

you are in the mood for exploration, push into the cliffs like gnarled fingers, seemingly determined to grasp as much of the land as possible. There are bass here, too. But more important, there is a twisting land that seems to beat upon your consciousness with its difference.

These long coves seem to have no reason for their being. They start some distance off the lake and appear to have always been there, deep and mysterious.

But there's not much time for sight-

seeing. It's still a long way to Sandy Point; your next camping spot.

Once through these narrows, you really experience a touch of disappointment. Or at least your arms do. Here's another lake—a big one. But happiness overcomes the threat of distance because there, across the lake, are sandy beaches, glistening in the afternoon sun; beckoning, promising.

Sandy Point is a popular camping area—mainly because there is simply no other place to camp for several miles in any direction. The point juts into the water, forming another narrow section in the lake. The sandy beaches almost com-

Author shows off five-pound bass taken during canoe trip on Lake Mead.

pletely surround this huge point. You can camp anywhere on either side of Sandy Point.

Another surprise will perhaps greet you here. The water is suddenly several degrees warmer than it was back at Pierce Ferry.

If your destination is South Cove, you're just about there. This means camping at Sandy Point can be even more relaxing. It's just a short canoe trip from here to your destination and you can take as much time as you like.

If you planned on making it to Temple Bar, you can run out of time at Sandy Point early in the morning. It's a long way—and, again, few places to camp in between.

If you are a gung-ho canoeist and are more interested in canoeing than in seeing the lake and its surrounding land, there really is no problem. Two strong men can push a canoe all the way from Pierce Ferry to Temple Bar in one day—if they are determined enough. Although I've never known anyone to do it.

Beyond Sandy Point, the lake widens once again for about five miles. Then, back into another canyon. This one is known as Virgin Canyon—and there is a beautiful camping spot about half way through this canyon known as Gregg's Hideout. There used to be a dirt road into this spot, but the rains of last summer washed it out and at the time of this writing, it had not been repaired.

Out of Virgin Canyon, the canoeist is suddenly confronted with more camping areas than he dreamed possible the night before. There are numerous coves, every one of them an ideal place to camp.

This is the upper part of Lake Mead; there are few boats and few people; at least it seems that way. But from Virgin Bay on to the dam, the boats begin to thicken.

It's a part of the lake that can be explored after the upper reaches have been conquered. But to me, the part of the lake I have described here is more than enough to keep a group busy for several weeks, for several trips.

And by the way, I did not get any pictures of those desert bighorn sheep; instead, I caught a five-pound bass.



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TROUT, BASS AND CATFISH

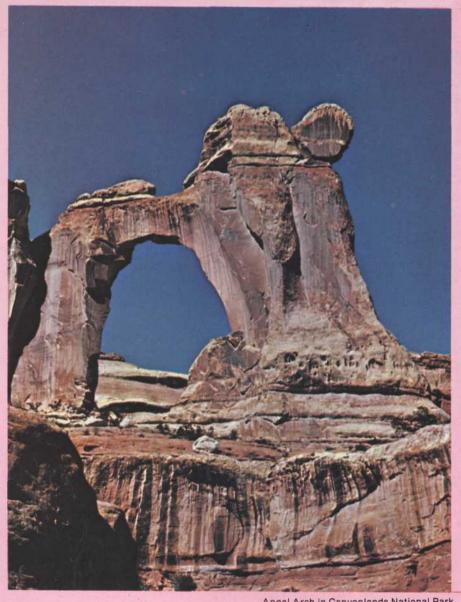
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by

E HAVE often wondered what went through the mind of the German mineralogist, Fredrich Mohs, when he decided to devise a hardness scale. He probably had no difficulty deciding about the softer minerals, but he must have had many conferences with himself about the harder ones.

erals (most of them very interesting) be-

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have caused him no sleepless nights. After he chose topaz for number 8, then the insomnia must have set in. In our minds, he could have had three channels of thought.

First, he must have known that there were very few minerals over 8 in hardness. He must have pondered his original decision of making a scale of 10, and no doubt wondered why go beyond 8.

Second, he probably explained away some of the problem by assuming that future mineralogists would find many more minerals above 8. If he thought thus, history has not borne him out.

Third, regardless of the first two thoughts, and any decisions resulting, there were two well known and relatively common minerals harder than topaz. One, corundum, was definitely harder. and another, diamond, was many times harder. Thus, his original thinking must have seemed valid. Many people, well and poorly acquainted with mineralogy, have questioned the upper portion of the hardness scale.

We doubt if any of the questioning was directed at the accuracy of the minerals chosen for 8, 9 and 10. Certainly, each is harder than the one below, but the question that arises is simply, "why bother?" We shall discuss the relative hardness of the other two minerals in our next columns. Good choice or not, topaz is number 8, and we shall discuss it.

Regardless of where it stands relative to any others on the scale, the choice seems a good one to us. It is the only reasonably common mineral that stands as the hardest of the group above 7. Topaz reminds us as a sort of wall enclosing a group of interesting minerals that are only slightly softer. Most of us do not really expect to find many that are harder than 8.

Topaz is an aluminum fluo-silicate, which puts it in a class by itself. Minerals that are aluminum silicates plus one or more other elements are common, but any sort of combination with the gas fluorine is rare.

The mineral has another characteristic which is somewhat unusual-it cleaves in only one direction; parallel to the base of the crystal. There are other minerals that have only a single cleavage, and most are soft, but there is a far larger group that has more than one cleavage.

This single cleavage of topaz is interesting. It is very easy to initiate a split

across the crystal. In fact, it is very difficult to find a crystal or rough piece of topaz under any condition that does not show at least one cleavage face. This face is very brilliant and very smooth. With this cleavage, topaz also shows a good conchoidal fracture. Thus, almost any rough piece of topaz will show curved, somewhat dish-like surfaces over it, but virtually always there will be that pair of flat, shiny faces, opposite and parallel to each other.

In spite of all these interesting features, the name topaz has led a double life and it is greatly misunderstood by most of the population. Nearly everyone has heard of topaz, but most would not know it if they saw it.

This double life evidently started in the very beginning. The name is thought to be from the Greek-topazos, to seek. The word was evidently used in connection with an island in the Red Sea, which was usually covered with fog. The island is now owned by Egypt and called Zeberget. When it was owned by the British, it was known as St. John.

The reason for the seeking of the island was a gem material found there which, in the early centuries A.D., evidently was called topaz. Something happened namewise, however, for the gem on the island is now called peridot.

Most topaz is colorless. Colored material from many locations fades, thus no doubt much of the colorless material was once of some color. The color that is most common is blue, but surprisingly, most people do not realize it exits. In our minds, there is nothing more beautiful than a fine blue topaz gem. The color that is next most common is yellow or orange. Using the word common in connection with yellow or orange topaz is really a mistake, as neither of them really are common. Yellow topaz, known usually as golden topaz, is not extremely rare, but fine flawless gems bring a high price. The orange, known as imperial topaz, is rare and good clear gems are expensive. A few other colors, such as red and green, are known but very rare. The red or pink topaz on the market today is produced from orange topaz by heat treatment.

There is NO smoky topaz! Hereby hangs a tale.

Somewhere back in the beginning of our modern trend toward possession of gems, the imperial color of topaz struck buyers as one to possess. As it was rare, the demand could not be satisfied. Whenever this happens, someone looks around for a substitute. It was found in quartz. Citrine, a color closely matching imperial topaz, was obtained by heat treating certain types of amethyst. As there was (and apparently still is) plenty of this amethyst, the market was soon filled with "golden" and "imperial" topaz Innumerable jewelry buyers bought these imitations. We have seen many of them; we seldom see a real topaz. We have found ourselves sometimes in a heated, one-way discussion when we stated that the gem was not topaz, but instead quartz. We have been quoted appraisal values, insurance policy figures, and other "proofs," even though our eyes and instruments told us otherwise.

One good thing leads to another. If golden quartz can nicely masquerade as topaz, why not try another? Thus "smoky topaz" was born! As smoky quartz was very common, the new gem sold at a lower price than the golden imitation. More people could afford them, and smoky topaz almost became a household word. Unscrupulous? Yes! But really only as far as the producers were concerned. Virtually all of the dealers elsewhere were duped as were the final customers. Through all this, we often wonder why blue topaz was left to obscurity.

Today, it is illegal in this country to sell any gem under an incorrect name, and this is especially pointed toward the aliases of topaz. However, go to almost any other foreign country, and there they are—the two colors of quartz making like topaz

Brazil furnishes most of our gem-quality topaz, and much of it is found in old stream beds. The pieces were rolled many miles down some stream and came to rest as rounded pieces. Even with these, the cleavage planes are easily seen; there is at least one, and usually two, very small flat round shining cleavage faces.

Topaz is found is many places in the world, but at present, Brazil seems to have a monopoly on the various types. Some countries in Africa produce fine crystal specimens. Russia is a noted source. The United States has a number of well-known localities. One of the best known is Colorado. Utah has a location, in the desert, that is known to most rock-

hounds. This is the Thomas Mountains, a small range of hills of a bubbly lava. In the bubbles are found very beautiful, light orange crystals, which fade in sunlight.

Topaz, as a gem, has some limitations. Even though it is hard enough to easily stand normal wear, the cleavage can be a problem. It is fairly easy to split off a corner, and sometimes it is possible to completely split a gem on hard impact.

The optical properties of topaz are not really high enough to produce a gem of extreme brilliance, but they are good enough so that in combination with a bright color, the gem is excellent. Often when we have a citrine owner that does not believe us, we show them a cut golden or imperial topaz. The difference between the two usually is convincing.

All of this leads us to an inescapable conclusion—it seems a shame that a fine gem material has been so maligned. Even though many people know the name, few of them realize that it is a fine gem, and they have readily accepted a poor substitute. There are other gems that have been touched likewise in a lesser way; such is the world of gems!





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A CREEK CALLED ONION

Continued from Page 28

the elevated meadowlands of upper Fisher valley.

As our trip begins, we head north out of Moab on U.S. 163, driving an ordinary passenger car, because that's all that is needed to visit the enchanted land of Onion Creek. Two miles north of town, we come to the Colorado River. There, we turn right on Utah 128.

For the next 13 miles, we marvel at the magnitude and stark beauty of the deep river gorge, as the winding road closely parallels the Colorado below looming, colorful cliffs. Then, a stretch of verdant riverbottom ranchland appears, telling us we have reached a broader river valley, the valley formed by the three immense canyons that stretch from the Colorado toward the La Sal mountains.

Soon, a side road climbs sharply to enter picturesque Castle Valley, now familiar to millions as the site of television commercials in which a Chevrolet car was placed by helicopter high atop Castle Tower. We continue on upriver, past the gigantic sheer-walled mesas and spires that separate Castle Valley from Professor Valley. Next, we come to the more open mouth of Professor Valley, where still more green ranches lie below a receding panorama that terminates at the La Sal mountain peaks, some 16 miles away.

Lofty Fisher Mesa separates Professor Valley from Fisher Valley. This, too, we pass, watching as the strange skyline of lower Fisher Valley appears. One side of this valley mouth is dominated by the soaring spires of the Fisher Towers. The rest is a seemingly impenetrable maze of shorter, but still impressive dark red spires and walls and oddly-shaped minarets, many of them hundreds of feet tall.

Shortly, a spur road appears on our right, marked by an inconspicuous sign indicating "Fisher Valley." We turn onto this well-graded dirt road, heading for the mysterious grotto-land of Onion Creek. For about a mile, we roll through open sandflats dotted with desert plantlife. If it is spring or fall, many of these plants are covered with colorful blossoms, bright yellows and blues and ivories in blazing contrast to the dark red

sand.

As we continue, rounded, eroded rock outcroppings of the same reddish hue gradually dominate the open desert, and soon we drop beside and even into Onion Creek. As we twist and turn, following the road ever more deeply into the Onion Creek maze, we ford the shallow stream time and time again. Each crossing stirs the water and adds the pungent odor of onions to the air.

On and on we go, pausing every quarter-mile or so to get out and enjoy to the fullest the strange labyrinth we are entering. We walk around at each stop, pointing out weirdly-shaped rocks, rocks that bear such appropriate names as The Camel, Major Hoople, The Poodle, Donald Duck, Popeye and a hundred others.

Appallingly slender spires also reach toward the sky, and in one place, the gigantic, hooded figure of Little Red Riding Hood stands solemnly in front of a seated Grandma, with both looming on the skyline hundreds of feet above the creek and road. Two little "Chessmen," perhaps 30 or 40 feet tall, share the same high ridge.

As we have driven along, going ever deeper into this shadowed labyrinth, the road has climbed many low humps of land in cutting off wide loops of the twisting creek, but finally we reach a longer grade. Here, the road ascends steeply to travel a rocky ledge above the narrowing creek grotto for about a mile.

Here, too, is an opportunity for an enchanting walk along the creek. So, I leave you to follow on foot the most intricate and intimate twistings and turnings of Onion Creek, as I drive ahead to pick you up where the road next meets the stream.

At the rendezvous point I wait, listening to your voices echoing far ahead of you up the narrow chasm that Onion Creek has carved into solid sandstone the color of dried blood. As we meet, I know from your enthusiasm in describing that one-mile walk that you have been impressed by the unique mood of this unbelievable place.

On we go, then, following the sharply curving road past the deep grottos into the more open gypsqueeze hills. Here, we marvel at the masses of whitish mineral, shot through by other colors, eroded into strange shapes by rain, and undercut and fractured by heavier seasonal flows of Onion Creek.

After a time, we pause again, this time to sniff curiously around Stinking Spring, noting the tiny black puddles that mark arsenic seeps and marveling at the tough grasses that grow in the reeking, mineral-saturated water. One such grass looks like a gigantic species of Bermuda grass, with trailing, jointed runners following the waterflow. We note that the waters of Onion Creek above this springs area are odorless, and undoubtedly more drinkable.

Not far beyond Stinking Spring, the road heads up a steep grade, leaving the creek bottomlands once and for all. But here we pause once again to enjoy a picnic lunch in the cool shade of a gnarled old cottonwood tree, then to hike on up to the several origins of Onion Creek.

Within a mile or less, the flowing water divides and divides again, with each branch entering its own lush little valley. Marsh grasses and cottonwoods and other water-loving plants and trees fill these miniature edens that are set below great slopes of reddish sediments and still higher sandstone cliffs. The source of Onion Creek is as unique and lovely, in a different way, as the deep labyrinth it has cut farther down Fisher Valley.

Reluctantly, we leave this verdant region to return to our car and drive on up the road to upper Fisher Valley. Once there, where the road tops the grade, we stop to look across the picturesque ranchlands of the upper valley, walled by sheer cliffs on three sides. Then, we look back at the strange canyons we have come through, which are also bound on both sides by rock walls, one of them still higher than those surrounding the upper valley.

Here, or soon beyond the ranch, the good road ends, although two rough Jeep trails continue on into the wilds above and beyond the upper valley. But we turn around to retrace our route back down through the exposed masses of ancient gypsum, down through the maze of the lower valley and back to the more conventional beauty of the Colorado River gorge.

And as we finally leave Onion Creek and look back one last time, we pause to wonder at the wildly improbable combination of geological forces that, together with vast eons of time, have created one-of-a-kind Fisher Valley—and a creek called Onion.

Letters to the

Letters requesting answers must include stamped self-addressed envelope

Prisoners' Thanks . . .

We enjoy Desert Magazine (when we can get them) and wanted to express our thanks for many hours of "escape" - you see, we are prisoners.

Each copy of your fine magazine is read by too many prisoners to count, being the magazine that is kept for years while others are discarded after a year or two.

Chino, California.

Hyped Up On Hiking . . .

Congratulations on your recent articles stressing the joys of hiking and walking through our desert. Truly, one can be closer to the beauty, silence, solitude and serenity unique to the desert by hiking than he can bouncing along in a noisey, dust-raising, energy-consuming mechanical monster.

Can you continue to lend your weight to the creation and publicity of hiking and camping trails in the desert wilderness?

> GARY OWEN, Petaluma, California.

UFOs of Thousand Palms . . .

I have lived on the deserts of California and Arizona for many years, but not until I moved to Thousands Palms did I ever see a U F O. Relax, these are only little fellows, but there are many of them. I have made innumerable sightings during the night both on brilliant

nights and on very dark nights.

The majority of these little fellows have a light intensity and texture of a Jupiter, but occasionally you will see a rather dull one fly by. They always fly a perfectly straight line to all points of the compass and always maintain their plane parallel with the ground without deviation. They are visible for a distance of anywhere from 50' to 200' and at altitudes of 25' to 70'. Their speed varies, but generally seems to exceed the speed of the swiftest of birds. In size, I would estimate them to be about the size of a blackbird or a dove. They are quite startling because they appear instantly out of the void and disappear the same

Calendar of Events

NOVEMBER 27-DECEMBER 1, 9th Annual Gold Rock Ranch Rockhound Round-up, sponsored by the San Diego Council of Gem and Mineral Societies. Hosts: The Del Norte Gem and Mineral Society. Event to be held in Ogilby, California. Dealers, tailgaters, field trips, auctions, campfire entertainment. Contact Robert Walker, P.O.Box 697, Winterhaven, Calif. 92283.

NOVEMBER 30-DECEMBER 1, An Arizona Mineral Showcase sponsored by the Mineralological Society of Arizona, National Guard

The appearance is as if they were flying along at a fixed speed, altitude and direction and suddenly turned on the light and then equally suddenly turned it off. I have been sighting them periodically ever since I moved here in 1970.

I wonder if you or any of your readers have an explanation. If so, I would be most interested to learn what it might be.

> E. LLOYD PEARSON, Thousand Palms, Calif.

Editor's Note: Oh boy! This will really bring a flood of mail. Let's see what the readers think

Desert Is Great Therapy . . .

Our brother-in-law, who was visiting us the past month, has been extremely ill. The very best medicine that either doctor or his family found for him is copies of Desert that we have around. They really got him interested in getting better-to the extent that he and his wife returned home yesterday to Massachusetts to sell their home and come back to our beautiful Mojave Desert.

God bless you all for making His creations so available to all of us.

> MRS. JOHN GUINAN, Yucca Valley, Calif.

Editor's Note: Our daily tasks seem all worthwhile when letters such as this are received. Many thanks and we wish your brother-in-law a speedy recovery in the desert sun.

Where's Pegleg . . .

I haven't seen any additional letters from "Mr. Pegleg." Is he going to let us down after getting us all interested again in his last

> J. BROWNLY, San Diego, California.

Editor's Note: We have not heard from Mr. Pegleg since the letter which appeared in our June, 1974 issue.

Armory, 52 Street and McDowell Rd., Phoenix, Arizona. Dealer space filled. Admission. \$1 adults, children under 12 free with adult. Free parking. Contact: Walt Peck, 4222 East Piccadilly Rd., Phoenix, AZ 85018.

JANUARY 16-19, 5th Annual Gem-Rock and Hobby Show sponsored by the Palo Verde Improvement Association, Palo Verde, Calif., 20 miles S.W. of Blythe. Chairman: Helen Madden, Box 95, Palo Verde, Calif. 92266.

JANUARY 18 & 19, 6th Annual Superstition Mineral Festival, State Fairgrounds, 19th Avenue and McDowell, Phoenix, Arizona. Benefit for the A. L. Flagg Foundation. A tailgate show. Write: Ruth Bartlett, Sec., Box 11023, Phoenix, Arizona 85061.

FEBRUARY 1 & 2, Southern Nevada Antique Bottle Collectors 10th Annual Show and Sale. Las Vegas Convention Center. Contact: Show Secretary Mrs. Pat Eastley, 431 No. Bruce St., Las Vegas, Nev. 90101.

FEBRUARY 28-MARCH 1 & 2, Phoenix Gem and Mineral Show, "Western Roundup of Gems" sponsored by Maricopa Lapidary Society, Inc. State Fairgrounds, Phoenix, Ariz. Overnight camper parking. Field trip. Lou Irons Chmn., 2046 W. Orange Dr., Phoenix, Ariz. 85015.

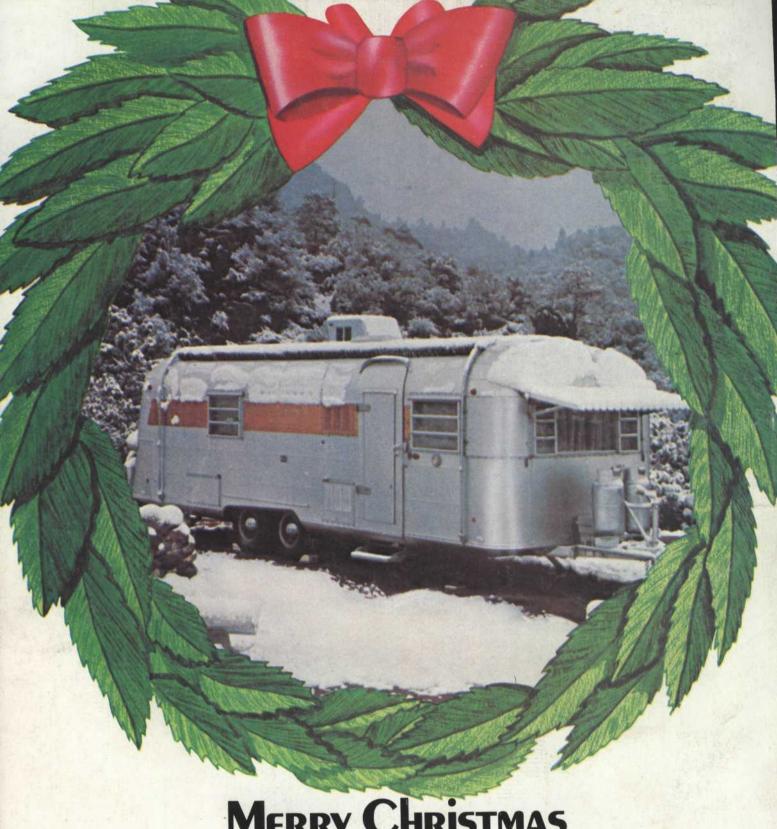
FEBRUARY 28-MARCH 9, Imperial Valley Gem and Mineral Society presents their 28th annual show as part of the California Midwinter Fiar at Imperial, Calif. Field trip: Cerro Pinto, Mexico on March 8th. Dealers, area for trailers and campers (no hookups). Chairman: Bob Wright, 1028 W. Adams, El Centro, California 92243.

MARCH 1 & 2, Ventura Gem & Mineral Society's 13th Annual Show, "Artistry from Nature," Ventura County Fairgrounds, Ventura, Calif. Dealers full - camping. Show chairman: Frank King, 684 Guiberson Rd., Fillmore, CA

MARCH 8 & 9, 13th Annual Spring Parade of Gems, Elks Club, 1000 Lily Hill Drive. Sponsors Needles Gem and Mineral Club. P. O. Box 762, Needles, Calif. 92363. Chairman: Bob Brocks. Dealers filled.

MARCH 14-16, 15th Annual Southwest Gem & Mineral Show, Villita Assembly Hall, 401 Villita St., San Antonio, Texas.

MARCH 15 & 16, "Gem Roundup" sponsored by the Sequoia Mineral Society, Dinuba, California, Memorial Building. Chairman: Sam Phillips, 10300 Kings River Rd., Reedley, Calif. 93654.



MERRY CHRISTMAS AND HAPPY NEW YEAR

to Silver Streak owners, future owners and our dealers.